STORMWATER MAINTENANCE PLAN

Data Center at Bell Works
101 Crawfords Corner Road
Block 11, Lot 38.07
Holmdel Township, Monmouth County, New Jersey

Prepared For:

Applicant
Terna Infrastructure USA, Inc.
1270 Avenue of the Americas
New York, NY 10020

Prepared By:

Langan Engineering & Environmental Services, LLC
300 Kimball Drive
Parsippany, New Jersey 07054

Leonard D. Savino, PE
New Jersey P.E. License Number GE-39238

24 July 2026
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TABLE OF CONTENTS

Page No.

INTRODUCTION **2**

1.0 PROJECT DESCRIPTION AND BASIN SUMMARY TABLES **2**

Existing Site Description **2**
Proposed Development **3**

2.0 STORMWATER MAINTENANCE OBJECTIVE **6**

3.0 MAINTENANCE OF CONVEYANCE SYSTEMS **7**

4.0 MAINTENANCE OF BIORETENTION BASINS **8**

5.0 MAINTENANCE OF CONTECH RAPTERRA VAULT TREATMENT DEVICES **9**

6.0 ANNUAL EVALUATION OF THE EFFECTIVENESS OF THE PLAN **10**

LIST OF ATTACHMENTS

Attachment 1	Maintenance Inspection Checklist for Conveyance Systems
Attachment 2	Maintenance Log for Conveyance Systems
Attachment 3	Maintenance Inspection Checklist for Bioretention Basins
Attachment 4	Maintenance Log for Bioretention Basins
Attachment 5	Rapterra Vault Owner's Manual
Attachment 6	Record of Annual Evaluation of the Effectiveness of the Plan

LIST OF DRAWINGS

CG101	Grading Plan
CG102	Drainage Plan
CS503	Construction Details III
CS504	Construction Details IV

INTRODUCTION

The New Jersey Administrative Code NJAC 7:8-5.8 entitled "Maintenance requirements" sets forth rules and refers to the New Jersey Stormwater Best Practices Manual (BMP Manual) prepared by the New Jersey Department of Environmental Protection (NJDEP). Chapter 8 of the BMP Manual entitled "Maintenance and Retrofit of Stormwater Management Measures" specifically addresses the requirements for maintenance for a major development. A major development is defined in the aforementioned administrative code as an individual "development," as well as multiple developments that individually or collectively result in:

1. The disturbance of one or more acres of land since February 2, 2004;
2. The creation of one-quarter acre or more of "regulated impervious surface" since February 2, 2004;
3. The creation of one-quarter acre or more of "regulated motor vehicle surface" since March 2, 2021; or,
4. A combination of 2 and 3 above that totals an area of one-quarter acre or more. The same surface shall not be counted twice when determining if the combined area equals one-quarter acre or more.

This plan is prepared to address the maintenance component of the proposed stormwater improvements to ensure the effective, efficient, and enduring service of a particular stormwater measure. The plan contains preventive and corrective maintenance tasks and procedures. The party responsible for preventative and corrective maintenance of the stormwater measures described herein is:

Terna Infrastructure USA, Inc.
1270 Avenue of the Americas
New York, NY 10020

Per NJAC 7:8-5.8(d), this maintenance plan and any future revisions shall be recorded upon the deed of record for the property on which the maintenance is described.

1.0 PROJECT DESCRIPTION AND BASIN SUMMARY TABLES

Existing Site Description

The Data Center at Bell Works project is located at the southwest corner of the Bell Works campus at 101 Crawfords Corner Road in Holmdel Township, Monmouth County, New Jersey. The site is located at the southwest corner of a 100-acre property defined as Block 11, Lot 38.07 (see Figure 1 – Site Location Map).

Site features consist of six buildings, an electrical substation, at-grade parking areas and driveways, maintained lawn areas, and wooded areas. The site is bound by residential properties on the north, Bell Laboratories Road on the northeast, Hop Brook and its associated tributaries and wetlands on the west, south, and east.

The site topography is moderately sloped with existing surface elevations ranging from elevation 125 (NAVD 1988) at the northern property boundary to elevation 80 at the convergence of Hop

Brook tributaries with Hop Brook. Slopes within the site vary from less than 5% in some areas to greater than 20% in other areas. Stormwater runoff flows to a tributary of Hop Brook on the south and a separate tributary of Hop Brook on the east, which both ultimately converge with the main channel of Hop Brook due southeast of the project.

Stormwater runoff flows to a tributary of Hop Brook on the south and a separate tributary of Hop Brook on the east, which both ultimately converge with the main channel of Hop Brook along the southern property boundary.

Proposed Development

The proposed development will consist of the following improvements:

- Demolition of two existing buildings and associated site improvements;
- A new 2-story data center with an at-grade building footprint of 53,860 square feet;
- New at-grade parking areas, driveways and landscape areas;
- Stormwater management system consisting of three small-scale bioretention basins, manufactured treatment devices, and a new stormwater conveyance system; and,
- Utility infrastructure to support the development.

Parameters for each bioretention basin are summarized below.

Parameters for each bioretention basin are summarized below.

Bioretention Basin 1

Bioretention Basin 1 is a small-scale bioretention basin that contains approximately 24,800 cubic feet (0.57 acre-feet) of storage with a maximum storage depth of 3.5 feet. The basin has a bottom surface elevation of 103 and is designed with a 6-inch perforated HDPE underdrain. Discharge from the basin will be through an outlet control structure and 18-inch HDPE pipe to the proposed conveyance system that ultimately discharges to Hop Brook tributary and its associated wetlands at the southern site boundary. Refer to Drawing CS504 and Table 6 below for additional information.

Table 6 – Bioretention Basin 1 Design Summary

Storm Frequency	Rainfall Depth (inches)	Runoff Volume (cu ft)	Peak Discharge Rate (cfs)	Peak Water Surface Elevation (ft)
Water Quality	1.25	4,462	0.00	103.79
2-Year Current	3.35	15,633	1.28	104.23
10-Year Current	5.21	28,110	2.10	104.77
100-Year Current	8.96	56,625	4.15	105.86
2-Year Future	3.99	19,711	1.60	104.41
10-Year Future	6.14	34,868	2.43	105.06
100-Year Future	11.06	73,654	5.22	106.45

Contributory Drainage Area (Acres)	Water-Quality Design Storm Depth (ft)	100-Year Future Storm Drain Time (hours)	SHWT Elevation (ft)	Bottom of Gravel Layer Elevation (ft)	Separation from bottom of BMP to SHWT (ft)
1.33	0.79	31.6	96.5	99.5	3

Bioretention Basin 2

Bioretention Basin 2 is a small-scale bioretention basin that contains approximately 17,300 cubic feet (0.40 acre-feet) of storage with a maximum storage depth of 2.5 feet. The basin has a bottom surface elevation of 102.5 and is designed with a 6-inch perforated HDPE underdrain. Discharge from the basin will be through an outlet control structure and 18-inch HDPE pipe to the proposed conveyance system that ultimately discharges to Hop Brook tributary and its associated wetlands at the eastern site boundary. Refer to Drawing CS504 and Table 7 below for additional information.

Table 7 – Bioretention Basin 2 Design Summary

Storm Frequency	Rainfall Depth (inches)	Runoff Volume (cu ft)	Peak Discharge Rate (cfs)	Peak Water Surface Elevation (ft)
Water Quality	1.25	4,202	0.00	103.19
2-Year Current	3.35	14,136	1.59	103.53
10-Year Current	5.21	24,556	2.72	103.87
100-Year Current	8.96	47,621	4.67	104.56
2-Year Future	3.99	17,635	2.09	103.66
10-Year Future	6.14	30,220	3.16	104.06
100-Year Future	11.06	61,546	6.18	104.97

Contributory Drainage Area (Acres)	Water-Quality Design Storm Depth (ft)	100-Year Future Storm Drain Time (hours)	SHWT Elevation (ft)	Bottom of Gravel Layer Elevation (ft)	Separation from bottom of BMP to SHWT (ft)
1.90	0.69	27.1	98	99	1

Bioretention Basin 3

Bioretention Basin 3 is a small-scale bioretention basin that contains approximately 27,700 cubic feet (0.64 acre-feet) of storage with a maximum storage depth of 2.5 feet. The basin has a bottom surface elevation of 102.5 and is designed with a 6-inch perforated HDPE underdrain. Discharge from the basin will be through an outlet control structure and 18-inch HDPE pipe to the proposed conveyance system that ultimately discharges to Hop Brook tributary and its associated wetlands at the southern site boundary. Refer to Drawing CS504 and Table 8 below for additional information.

Table 8 – Bioretention Basin 3 Design Summary

Storm Frequency	Rainfall Depth (inches)	Runoff Volume (cu ft)	Peak Discharge Rate (cfs)	Peak Water Surface Elevation (ft)
Water Quality	1.25	4,797	0.00	102.99
2-Year Current	3.35	15,436	0.73	103.34
10-Year Current	5.21	25,963	1.23	103.78
100-Year Current	8.96	48,568	2.24	104.53
2-Year Future	3.99	18,979	0.94	103.49
10-Year Future	6.14	31,440	1.42	103.99
100-Year Future	11.06	61.645	2.67	104.97

Contributory Drainage Area (Acres)	Water-Quality Design Storm Depth (ft)	100-Year Future Storm Drain Time (hours)	SHWT Elevation (ft)	Bottom of Gravel Layer Elevation (ft)	Separation from bottom of BMP to SHWT (ft)
0.88	0.49	31.0	98	99	1

2.0 STORMWATER MAINTENANCE OBJECTIVE

The stormwater systems proposed for this development are intended to detain, treat, and convey the stormwater from the development. This maintenance plan is prepared to verify that the proposed systems in place are operating efficiently and reliably. The responsible party shall ensure the long-term/perpetual operation, maintenance, repair, and safety of the stormwater management facilities. In the event that the stormwater management or conveyance system becomes a danger to public safety or public health, or if it is in need of maintenance, the municipality shall so notify the responsible person in writing. If for reasons of safety there is need for immediate action, the responsible person shall act forthwith to remove the danger.

Maintenance procedures are required to maintain the intended operation and safe condition of the stormwater management facility by reducing the occurrence of problems and malfunctions. To be effective, maintenance shall be performed on a regular basis and include such routine procedures as training of staff, periodic inspections, silt and debris removal and disposal, control of mosquitoes and other insects, and review of maintenance and inspection work to identify where the maintenance program could be more effective. The required inspections are to be conducted only

by properly trained individuals, including confined space entry training and certification. As per N.J.A.C. 7:8-5.8(f), the person responsible for maintenance shall maintain a detailed log of all preventative and corrective maintenance for the structural stormwater management measures incorporated into the design of the development, including a record of all inspections and copies of all maintenance-related work orders. The person with maintenance responsibility must retain and, upon request, make available the maintenance plan and associated logs and other records for review by a public entity with administrative, health, environmental, or safety authority over the site.

Repair procedures are required to correct a problem or malfunction at a stormwater management facility and to restore the facility's intended operation and safe condition. Based upon the severity of the problem, repairs shall be performed on an as-needed or emergency basis and may include such procedures as structural repairs, mosquito control, removal of debris, sediment and trash which threaten discharge capacity, erosion repair, snow and ice removal and restoration of vegetation.

In the event that the stormwater management conveyance system becomes a danger to public safety or public health, or if it is in need of maintenance, the municipality may notify the responsible person in writing. Upon receipt of that notice, the responsible person shall have fourteen (14) days to initiate maintenance and repair of the system in a manner that is approved by the municipal engineer or his designee. If the responsible person fails or refuses to perform such maintenance and repair, the municipality may immediately proceed to do so and shall bill the cost thereof to the responsible person.

3.0 MAINTENANCE OF CONVEYANCE SYSTEMS

The proposed conveyance systems have adequate access for inspection and/or maintenance. The use of the proposed conveyance systems is necessary to manage runoff and is consistent with the community's surroundings for this area.

All conveyance systems including inlets/catch basins, manholes and pipes are expected to receive and/or accumulate debris and sediment. These systems must be inspected for clogging and excessive debris and sediment accumulation at least annually as well as after every storm exceeding 2 inches of rainfall. Sediment removal should take place when all runoff has drained from the conveyance network and the systems are reasonably dry. Disposal of debris, trash, sediment, and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, state, and federal waste regulations.

All structural components must be inspected quarterly for cracking, subsidence, breaching, wearing, and deterioration. The condition of surrounding and above lying materials shall be inspected for evidence of potential failures or deterioration. Damage to the structural components shall be repaired promptly. The analysis of structural damage and the design and performance of structural repairs should only be undertaken by qualified personnel.

Maintenance of the conveyance systems would require a minimum of two people. The routine

equipment expected to be utilized for the maintenance tasks may include a jet vacuum vehicle, shovels, lighting equipment and a wheel barrel or truck for the hauling off of debris. Water, mosquito control chemicals, and concrete repair materials may also be required depending on the condition of the structure. The cost to perform routine maintenance tasks including removal of debris, sediment and trash is estimated to be $5,000/year for the proposed on-site conveyance systems.

Related inspection and maintenance forms for this work are located at the end of this plan.

4.0 MAINTENANCE OF BIORETENTION BASINS

The proposed bioretention basins have adequate access for inspection and/or maintenance. The use of the proposed bioretention basin is necessary to manage stormwater runoff, provide water quality treatment.

The bioretention basin's receiving inlets and outlet control structure are expected to receive and/or accumulate debris and sediment on occasion. Inspect for clogging, excessive debris, and sediment accumulation at least four times a year as well as after every storm exceeding 1 inch of rainfall. Accumulated sediment removal should only take place when the bioretention basin is thoroughly dry. Disposal of debris, trash, sediment and other waste material shall be done at suitable disposal/recycling sites and in compliance with applicable local, county, state and federal waste regulations.

All structural components should be inspected for cracking, subsidence, spalling, erosion, and deterioration at least once annually. Replace any displaced rip-rap stone, as required. The system should be periodically inspected for standing water.

The underdrain piping must be connected, in a manner that is easily accessible for inspection and maintenance, to a downstream location. Access points for maintenance are required on all enclosed areas within a bioretention system.

The bioretention basins may not be used for stockpiling of plowed snow and ice, compost, or any other material.

Bi-weekly inspections are required when establishing/restoring vegetation. A minimum of one inspection during the growing season and one inspection during the non-growing season is required to ensure the health, density, and diversity of the vegetation. Mowing/trimming of vegetation must be performed at least once a year in the early spring prior to growth. Site specific and weather conditions may require mowing/trimming on a more frequent schedule. Perimeter grass should be mowed at least once a month during growing season.

Grasses within the small-scale bioretention basin must be carefully maintained with lightweight equipment, such as a hand-held line trimmer, in order to maintain the permeability of the system. Vegetative cover must be maintained at 85%; damage must be addressed through replanting in accordance with the original specifications. Vegetated areas must be inspected at least once annually for erosion, scour and unwanted growth; any unwanted growth should be removed with

minimum disruption to the remaining vegetation. All use of fertilizers, pesticides, mechanical treatments and other means to ensure optimum vegetation health must not compromise the intended purpose of the bioretention basin.

The cost to perform routine maintenance tasks including removal of debris, sediment and trash and mowing/trimming of vegetation is estimated to be $5,000/year.

The planting bed must be inspected at least twice annually to determine if the permeability of the bioretention basin planting bed has decreased. The bioretention basins have been designed to drain in less than 72 hours to reduce the potential for mosquito breeding. If significant increases or decreases in the normal drain time are observed, or if the 72-hour maximum is exceeded, a qualified designer/engineer should be consulted to identify appropriate corrective measures to restore the functions of the bioretention basin.

Water surface elevations for each design storm are indicated Section II. It is recommended that indelible markings be drawn or physical markers be set on the inside of the outlet control structure as visual indicators of the design storm water surface elevations. This will assist in evaluating the infiltration rate and effectiveness of the underdrains of the system over time.

Disposal of debris, trash, sediment, and other waste material shall be done at suitable disposal/recycling sites and in compliance with all applicable local, county, State and federal waste regulations.

Related inspection and maintenance forms for this work are located at the end of this plan.

5.0 MAINTENANCE OF CONTECH RAPTERRA VAULT TREATMENT DEVICES

The proposed Contech Rapterra Vault treatment devices allow adequate ability for inspection and/or maintenance. All treatment device components are expected to receive and/or trap debris and sediment must be inspected in accordance with Contech's requirements. Such components may include overflow appurtenances and media. Sediment removal should take place when all runoff has drained from the device. In addition, the manholes should be cleaned and maintained. Disposal of debris, trash, sediment and other waste material should be completed in compliance with all applicable local, state and federal waste regulations.

All structural components must be inspected for cracking, subsidence, breaching, wearing and deterioration at least annually. The condition of surrounding and above-lying materials shall be inspected for evidence of potential failures or deterioration. Routine equipment expected to be used for the maintenance task may include a jet vacuum vehicle, shovels, lighting equipment and a wheelbarrow truck for hauling of debris. Concrete repair material may also be required.

The cost to perform maintenance tasks including removal of debris, sediment and trash, is estimated to be $5,000/year. Related maintenance information for inspection and maintenance of the water quality treatment device is provided in Attachment 5.

6.0 ANNUAL EVALUATION OF THE EFFECTIVENESS OF THE PLAN

As per N.J.A.C. 7:8-5.8(g), the person responsible for maintenance shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan as needed. The annual assessment shall be documented. Records must be retained and be available upon request for review by a public entity with administrative, health, environmental, or safety authority over the site.

The responsible party should evaluate the effectiveness of the maintenance plan by comparing the maintenance plan with the actual performance of the maintenance. The items to evaluate may include, but not be limited to:

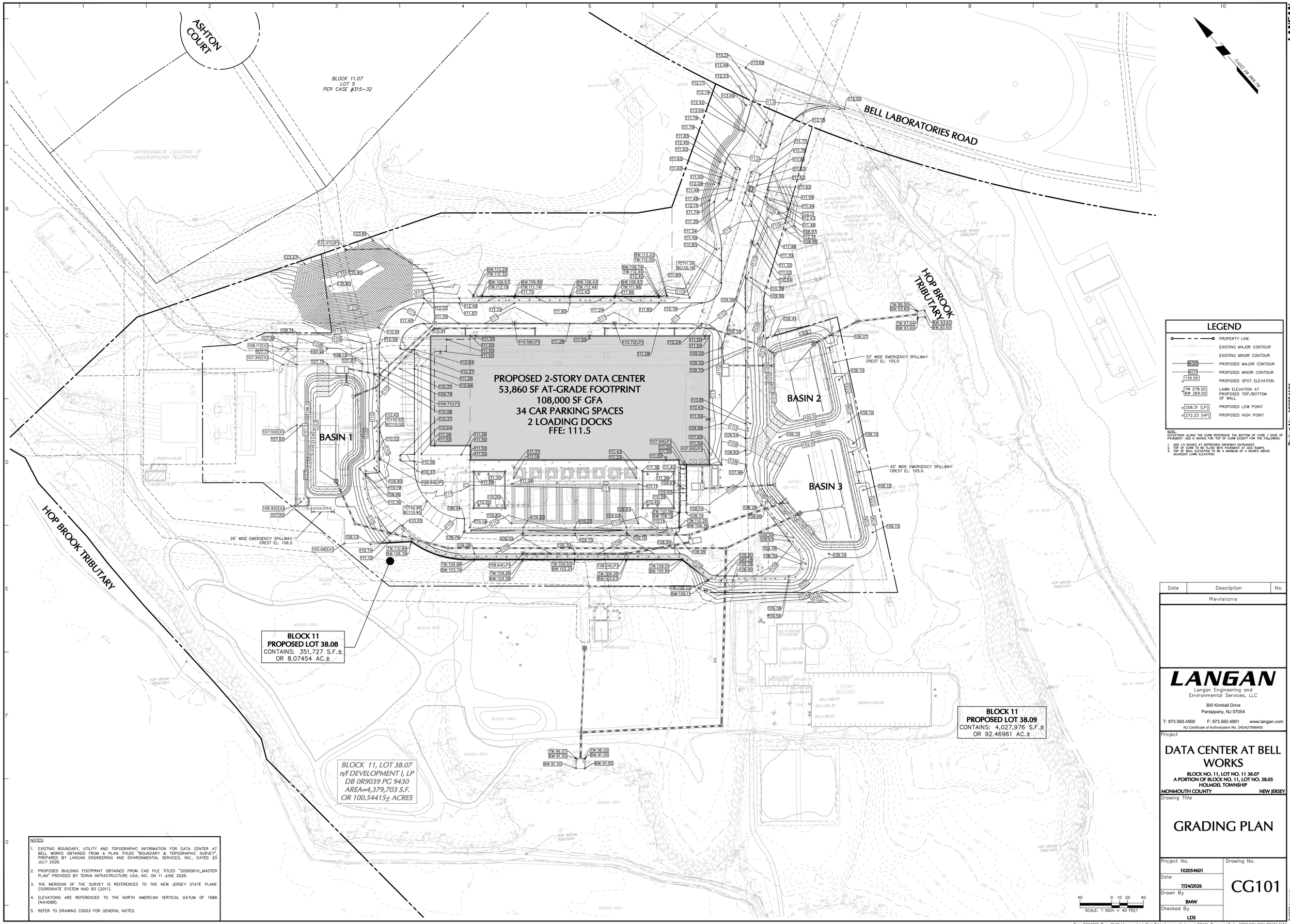
- Whether the inspections have been performed as scheduled;
- Whether the preventive maintenance has been performed as scheduled;
- Whether the frequency of preventative maintenance needs to increase or decrease;
- Whether the planned resources were enough to perform the maintenance;
- Whether the repairs were completed on time; and
- Whether the inspection, maintenance, and repair records have been kept.

If actual performance of those items has been deviated from the maintenance plan, the responsible party should find the causes and implement solutions in a revised maintenance plan.

Related annual evaluation form is in the appendix at the end of this plan.

DRAWINGS

LANGAN



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 600 — PROPOSED MAJOR CONTOUR
- 601 — PROPOSED MINOR CONTOUR
- 135.50 — PROPOSED SPOT ELEVATION
- TW 278.20 / BW 269.00 — LAWN ELEVATION AT PROPOSED TOP/BOTTOM OF WALL
- 258.31 (LP) — PROPOSED LOW POINT
- 272.23 (HP) — PROPOSED HIGH POINT

NOTE:
ELEVATIONS ALONG THE CURB REFERENCE THE BOTTOM OF CURB / EDGE OF PAVEMENT. ADD 6 INCHES FOR TOP OF CURB EXCEPT FOR THE FOLLOWING:

1. ADD 1.5 INCHES AT DEPRESSED DRIVEWAY ENTRANCES
2. TOP OF CURB TO BE FLUSH WITH PAVEMENT AT ADA RAMPS.
3. TOP OF WALL ELEVATION TO BE A MINIMUM OF 4 INCHES ABOVE ADJACENT LAWN ELEVATION.

NOTES:

1. EXISTING BOUNDARY, UTILITY AND TOPOGRAPHIC INFORMATION FOR DATA CENTER AT BELL WORKS OBTAINED FROM A PLAN TITLED "BOUNDARY & TOPOGRAPHIC SURVEY", PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC., DATED 20 JULY 2026.
2. PROPOSED BUILDING FOOTPRINT OBTAINED FROM CAD FILE TITLED "20260610_MASTER PLAN" PROVIDED BY TERNA INFRASTRUCTURE USA, INC. ON 11 JUNE 2026.
3. THE MERIDIAN OF THE SURVEY IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM NAD 83 (2011).
4. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
5. REFER TO DRAWING CS003 FOR GENERAL NOTES.

Date	Description	No.
Revisions		

LANGAN
Langan Engineering and Environmental Services, LLC
300 Kimball Drive
Parsippany, NJ 07054
T: 973.560.4900 F: 973.560.4901 www.langan.com
NJ Certificate of Authorization No. 24GA27996400

Project

DATA CENTER AT BELL WORKS

BLOCK NO. 11, LOT NO. 11 38.07
A PORTION OF BLOCK NO. 11, LOT NO. 38.05
HOLMDEL TOWNSHIP
MONMOUTH COUNTY NEW JERSEY

Drawing Title

GRADING PLAN

Project No.	Drawing No.
102054601	CG101
Date: 7/24/2026	
Drawn By: BMW	
Checked By: LDS	

Project No. 102054601

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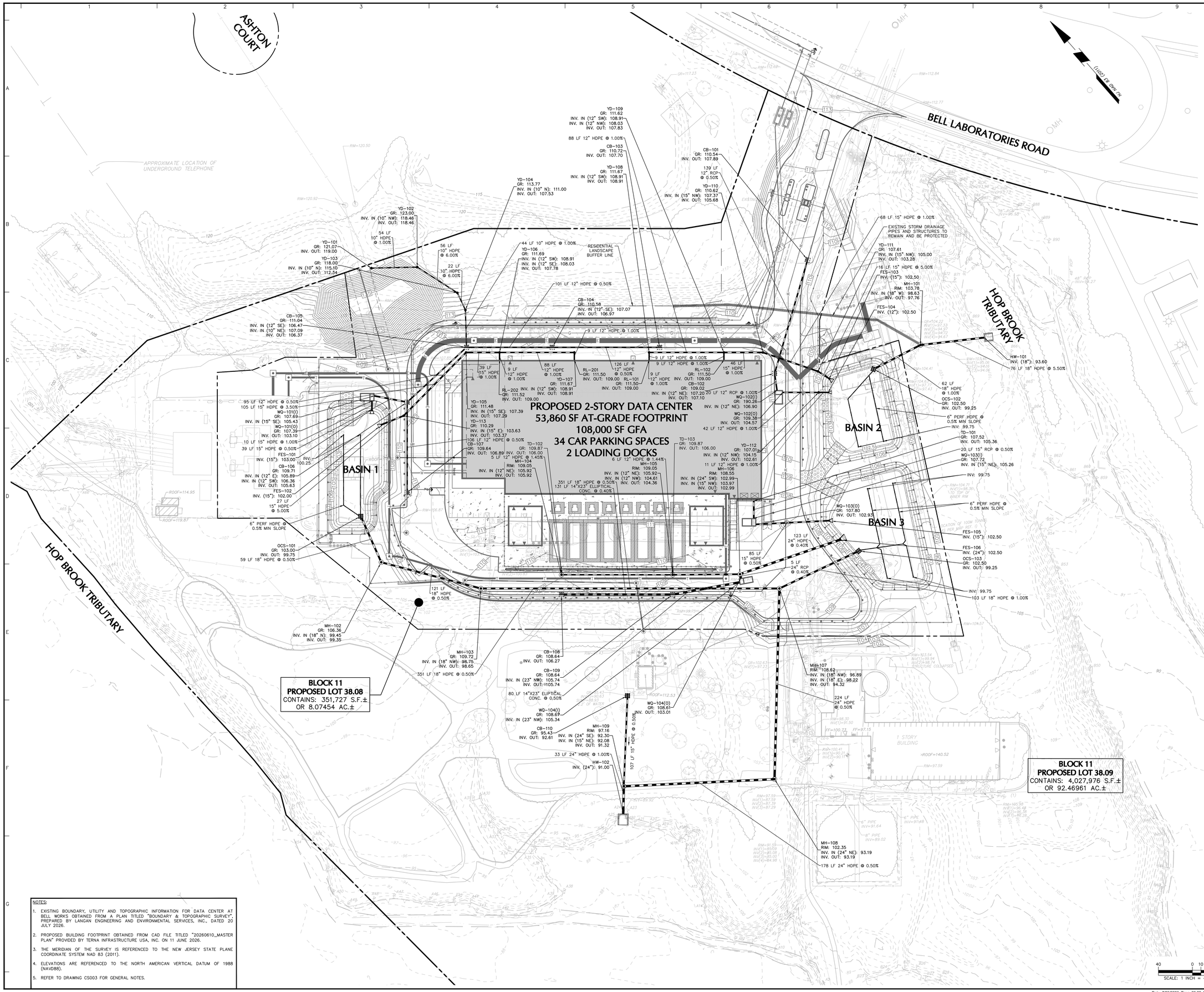
Date: 7/23/2026 Time: 22:52 User: agabriel Style Table: Langan.stb Layout: CG101 Document Code: 102054601-0501-CG101-0101


ASHTON COURT
BELL LABORATORIES ROAD
HOP BROOK TRIBUTARY
HOP BROOK TRIBUTARY
APPROXIMATE LOCATION OF UNDERGROUND TELEPHONE
RESIDENTIAL LANDSCAPE BUFFER LINE
PROPOSED 2-STORY DATA CENTER
53,860 SF AT-GRADE FOOTPRINT
108,000 SF GFA
34 CAR PARKING SPACES
2 LOADING DOCKS
BASIN 1
BASIN 2
BASIN 3
BLOCK 11
PROPOSED LOT 38.08
CONTAINS: 351,727 S.F.±
OR 8.07454 AC.±
BLOCK 11
PROPOSED LOT 38.09
CONTAINS: 4,027,976 S.F.±
OR 92.46961 AC.±
1 STORY BUILDING
YD-101 GR: 121.07 INV. OUT: 119.00
YD-102 GR: 123.00 INV. IN (10" NW): 118.46 INV. OUT: 118.46
YD-103 GR: 118.00 INV. IN (10" N): 115.10 INV. OUT: 112.54
YD-104 GR: 113.77 INV. IN (10" N): 111.00 INV. OUT: 107.53
YD-105 GR: 111.48 INV. IN (15" SE): 107.39 INV. OUT: 107.29
YD-106 GR: 111.69 INV. IN (12" SW): 108.91 INV. IN (12" SE): 108.03 INV. OUT: 107.78
YD-107 GR: 111.67 INV. IN (12" SW): 108.91 INV. OUT: 108.91
YD-108 GR: 111.67 INV. IN (12" SW): 108.91 INV. OUT: 108.91
YD-109 GR: 111.62 INV. IN (12" SW): 108.91 INV. IN (12" NW): 108.03 INV. OUT: 107.83
YD-110 GR: 110.62 INV. IN (15" NW): 107.37 INV. OUT: 105.68
YD-111 GR: 107.61 INV. IN (15" NW): 105.00 INV. OUT: 103.28
YD-112 GR: 107.01 INV. IN (12" NW): 104.15 INV. OUT: 102.61
YD-113 GR: 110.29 INV. IN (15" E): 103.63 INV. OUT: 103.37
CB-101 GR: 110.54 INV. OUT: 107.89
CB-102 GR: 109.02 INV. IN (12" NE): 107.20 INV. OUT: 107.10
CB-103 GR: 110.72 INV. OUT: 107.70
CB-104 GR: 110.58 INV. IN (12" SE): 107.07 INV. OUT: 106.97
CB-105 GR: 111.04 INV. IN (12" SE): 106.47 INV. IN (10" NE): 107.09 INV. OUT: 106.37
CB-106 GR: 109.71 INV. IN (12" E): 105.89 INV. IN (12" SW): 106.36 INV. OUT: 105.63
CB-107 GR: 107.39 INV. OUT: 103.10
CB-108 GR: 108.64 INV. OUT: 106.27
CB-109 GR: 108.64 INV. IN (23" NW): 105.74 INV. OUT: 105.74
CB-110 GR: 95.43 INV. OUT: 92.61
MH-101 RIM: 103.78 INV. IN (18" W): 98.63 INV. OUT: 97.76
MH-102 GR: 106.36 INV. IN (18" N): 99.45 INV. OUT: 99.35
MH-103 GR: 109.72 INV. IN (18" NW): 98.75 INV. OUT: 98.65
MH-104 RIM: 109.05 INV. IN (12" NE): 105.92 INV. IN (12" NW): 104.61 INV. OUT: 104.36
MH-105 RIM: 109.05 INV. IN (12" NE): 105.92 INV. OUT: 105.92
MH-106 RIM: 108.55 INV. IN (24" SW): 102.99 INV. IN (15" NW): 103.97 INV. OUT: 102.99
MH-107 RIM: 108.62 INV. IN (18" NW): 96.89 INV. IN (18" E): 98.22 INV. OUT: 94.32
MH-108 RIM: 102.35 INV. IN (24" NE): 93.19 INV. OUT: 93.19
MH-109 RIM: 97.16 INV. IN (24" SE): 92.30 INV. IN (15" NE): 92.08 INV. OUT: 91.32
OCS-101 GR: 103.00 INV. OUT: 99.75
OCS-102 GR: 102.50 INV. OUT: 99.25
OCS-103 GR: 102.50 INV. OUT: 99.25
FES-101 INV. (15"): 103.00 INV: 100.25
FES-102 INV. (15"): 102.00
FES-103 INV. (15"): 102.50
FES-104 INV. (12"): 102.50
FES-105 INV. (15"): 102.50
FES-106 INV. (24"): 102.50
HW-101 INV. (18"): 93.60
HW-102 INV. (24"): 91.00
WQ-101(I) GR: 107.69 INV. IN (15" SE): 105.43
WQ-101(O) GR: 107.39 INV. OUT: 103.10
WQ-102(I) GR: 190.26 INV. IN (12" NE): 106.90
WQ-102(O) GR: 109.36 INV. OUT: 104.57
WQ-103(I) GR: 107.72 INV. IN (15" NE): 105.26
WQ-103(O) GR: 107.80 INV. OUT: 102.93
WQ-104(I) GR: 108.67 INV. IN (23" NW): 105.34
WQ-104(O) GR: 108.61 INV. OUT: 103.01
95 LF 12" HDPE @ 0.50%
105 LF 15" HDPE @ 3.50%
10 LF 15" HDPE @ 1.00%
39 LF 15" HDPE @ 0.50%
27 LF 15" HDPE @ 5.00%
6" PERF HDPE @ 0.5% MIN SLOPE
59 LF 18" HDPE @ 0.50%
54 LF 10" HDPE @ 1.00%
56 LF 10" HDPE @ 6.00%
22 LF 10" HDPE @ 6.00%
44 LF 10" HDPE @ 1.00%
101 LF 12" HDPE @ 0.50%
9 LF 12" HDPE @ 1.00%
39 LF 15" HDPE @ 1.00%
9 LF 12" HDPE @ 1.00%
88 LF 12" HDPE @ 1.00%
126 LF 12" HDPE @ 0.50%
9 LF 12" HDPE @ 1.00%
46 LF 15" HDPE @ 1.00%
9 LF 12" HDPE @ 1.00%
9 LF 12" HDPE @ 1.00%
88 LF 12" HDPE @ 1.00%
6 LF 12" HDPE @ 1.44%
106 LF 12" HDPE @ 0.50%
5 LF 12" HDPE @ 1.45%
351 LF 18" HDPE @ 0.50%
131 LF 14"X23" ELLIPTICAL CONC. @ 0.40%
80 LF 14"X23" ELLIPTICAL CONC. @ 0.50%
42 LF 12" HDPE @ 1.00%
11 LF 12" HDPE @ 1.00%
20 LF 12" RCP @ 1.00%
20 LF 15" RCP @ 0.50%
139 LF 12" RCP @ 0.50%
123 LF 24" HDPE @ 0.40%
85 LF 15" HDPE @ 0.50%
5 LF 24" RCP @ 0.40%
68 LF 15" HDPE @ 1.00%
16 LF 15" HDPE @ 5.00%
62 LF 18" HDPE @ 1.00%
76 LF 18" HDPE @ 5.50%
121 LF 18" HDPE @ 0.50%
103 LF 18" HDPE @ 1.00%
224 LF 24" HDPE @ 0.50%
107 LF 15" HDPE @ 0.50%
33 LF 24" HDPE @ 1.00%
178 LF 24" HDPE @ 0.50%
(1.00%) FB DWN TO
SCALE: 1 INCH = 40 FEET

DRAINAGE STRUCTURE SCHEDULE	
DATA CENTER AT BELL WORKS	
Structure ID	**Structure Type**
CB-101	TYPE B INLET
CB-102	TYPE B INLET
CB-103	TYPE B INLET
CB-104	TYPE B INLET
CB-105	TYPE B INLET
CB-106	TYPE B INLET
CB-107	TYPE B INLET
CB-108	TYPE B INLET
CB-109	TYPE B INLET
CB-110	TYPE E INLET
CB-101	TYPE B INLET
CB-102	TYPE B INLET
CB-103	TYPE B INLET
CB-104	TYPE B INLET
CB-105	TYPE B INLET
CB-106	TYPE B INLET
CB-107	TYPE B INLET
CB-108	TYPE B INLET
CB-109	TYPE B INLET
CB-110	TYPE E INLET
FES-101	15" HDPE FLARED END SECTION
FES-102	15" HDPE FLARED END SECTION
FES-103	15" HDPE FLARED END SECTION
FES-104	12" HDPE FLARED END SECTION
FES-105	15" HDPE FLARED END SECTION
FES-106	24" HDPE FLARED END SECTION
HW-101	CONCRETE HEADWALL
HW-102	CONCRETE HEADWALL
MH-101	4' DIAMETER PRECAST CONCRETE MANHOLE
MH-102	4' DIAMETER PRECAST CONCRETE MANHOLE
MH-103	4' DIAMETER PRECAST CONCRETE MANHOLE
MH-104	4' DIAMETER PRECAST CONCRETE MANHOLE
MH-105	4' DIAMETER PRECAST CONCRETE MANHOLE
MH-106	4' DIAMETER PRECAST CONCRETE MANHOLE
MH-107	4' DIAMETER PRECAST CONCRETE MANHOLE
MH-108	4' DIAMETER PRECAST CONCRETE MANHOLE
MH-109	4' DIAMETER PRECAST CONCRETE MANHOLE
OCS-101	OUTLET CONTROL STRUCTURE
OCS-102	OUTLET CONTROL STRUCTURE
OCS-103	OUTLET CONTROL STRUCTURE
RL-101	ROOF LEADER
RL-102	ROOF LEADER
RL-201	ROOF LEADER
RL-202	ROOF LEADER
TD-101	HEAVY DUTY PRECAST CONCRETE TRENCH DRAIN
TD-102	HEAVY DUTY PRECAST CONCRETE TRENCH DRAIN
TD-103	HEAVY DUTY PRECAST CONCRETE TRENCH DRAIN
WQ-101	WATER QUALITY STRUCTURE PEAK DIVERSION RAPTERRA 16'x8' VAULT
WQ-102	WATER QUALITY STRUCTURE PEAK DIVERSION RAPTERRA 14'X6' VAULT
WQ-103	WATER QUALITY STRUCTURE PEAK DIVERSION RAPTERRA 12'X6' VAULT
WQ-104	WATER QUALITY STRUCTURE PEAK DIVERSION RAPTERRA 10'X6' VAULT
YD-101	12" NYLOPLAST DRAIN WITH STANDARD GRATE
YD-102	12" NYLOPLAST DRAIN WITH SOLID COVER
YD-103	12" NYLOPLAST DRAIN WITH SOLID COVER
YD-104	12" NYLOPLAST DRAIN WITH SOLID COVER
YD-105	18" NYLOPLAST DRAIN WITH SOLID COVER
YD-106	15" NYLOPLAST DRAIN WITH SOLID COVER
YD-107	15" NYLOPLAST DRAIN WITH SOLID COVER
YD-108	15" NYLOPLAST DRAIN WITH SOLID COVER
YD-109	18" NYLOPLAST DRAIN WITH SOLID COVER
YD-110	18" NYLOPLAST DRAIN WITH SOLID COVER
YD-111	18" NYLOPLAST DRAIN WITH SOLID COVER
YD-112	15" NYLOPLAST DRAIN WITH SOLID COVER
YD-113	18" NYLOPLAST DRAIN WITH SOLID COVER

Note:
Contractor to submit shop drawings to the engineer of record for review and approval prior to commencement of construction.

LEGEND

- PROPERTY LINE
- 105 EXISTING MAJOR CONTOUR
- 599 EXISTING MINOR CONTOUR
- 600 PROPOSED MAJOR CONTOUR
- 601 PROPOSED MINOR CONTOUR
- PROPOSED DRAINAGE PIPE
- PROPOSED CATCH BASIN
- PROPOSED DRAINAGE MANHOLE
- PROPOSED FLARED END SECTION

NOTES:

1. EXISTING BOUNDARY, UTILITY AND TOPOGRAPHIC INFORMATION FOR DATA CENTER AT BELL WORKS OBTAINED FROM A PLAN TITLED "BOUNDARY & TOPOGRAPHIC SURVEY", PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC., DATED 20 JULY 2026.
2. PROPOSED BUILDING FOOTPRINT OBTAINED FROM CAD FILE TITLED "20260610_MASTER PLAN" PROVIDED BY TERNA INFRASTRUCTURE USA, INC. ON 11 JUNE 2026.
3. THE MERIDIAN OF THE SURVEY IS REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM NAD 83 (2011).
4. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
5. REFER TO DRAWING CS003 FOR GENERAL NOTES.

Date	Description	No.
Revisions		

LANGAN
Langan Engineering and Environmental Services, LLC
300 Kimball Drive
Parsippany, NJ 07054
T: 973.560.4900 F: 973.560.4901 www.langan.com
NJ Certificate of Authorization No. 24GA27996400

Project

DATA CENTER AT BELL WORKS

BLOCK NO. 11, LOT NO. 11 38.07
A PORTION OF BLOCK NO. 11, LOT NO. 38.05
HOLMDEL TOWNSHIP
MONMOUTH COUNTY NEW JERSEY

Drawing Title

DRAINAGE PLAN

Project No.	Drawing No.
102054601	CG102
Date: 7/24/2026	
Drawn By: ET	
Checked By: BMW	

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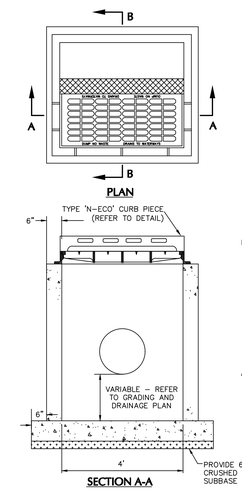
Project No. 102054601

Date: 7/23/2026 Time: 23:22 User: agabriel Style Table: Langan.stb Layout: CG102 Document Code: 102054601-0501-CG101-0102

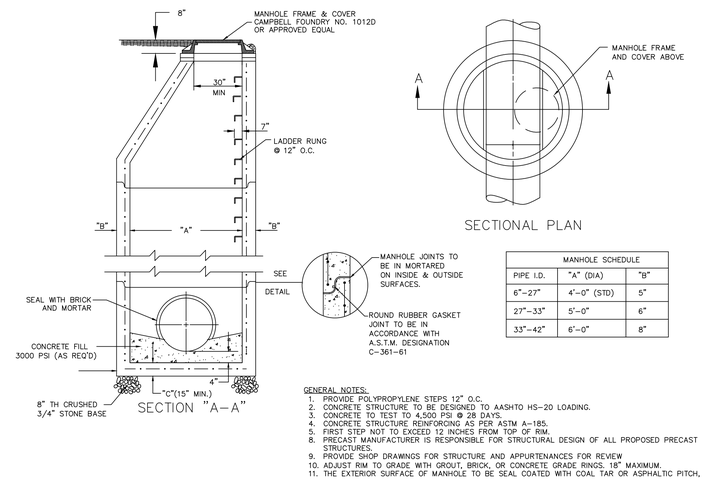


GENERAL NOTES

1. THE PRECAST MANUFACTURER IS RESPONSIBLE FOR STRUCTURAL DESIGN OF ALL PROPOSED PRECAST STRUCTURES. CONTRACTOR MUST PROVIDE SHOP DRAWINGS FOR REVIEW.
2. FOOTER AND INVERT TO BE NJDOT CLASS "C" CONCRETE.
3. IF WALL CONSTRUCTION OTHER THAN CONCRETE THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER.
4. CASTING TO BE CAMPBELL FOUNDRY NO. 2618 OR EQUIVALENT WITH TYPE N – ECO CURB PIECE.
5. PROVIDE ALUMINUM ALCO STEPS 6061T6 12" O.C. IN CATCH BASIN OVER 4' IN DEPTH. MAX. DIST. BETWEEN BOTTOM STEP AND BOTTOM OF INLET SHALL BE 18".
6. WHEN ADDITIONAL DEPTH IS SCHEDULED WALLS BELOW THE DEPTH OF 8'-0" MEASURED FROM THE INLET GUTTER TO INVERT, SHALL BE 12" THICK IF CONCRETE OR DOUBLE BLOCK IF BLOCK. THE FOUNDATION DIMENSION SHALL BE INCREASED 12" IN WIDTH AND TO 12" IN DEPTH.
7. SHALL MEET NJDOT STANDARDS AND H20 LOADING.
8. PRECAST MANUFACTURER IS RESPONSIBLE FOR STRUCTURAL DESIGN OF ALL PROPOSED PRECAST STRUCTURES.
9. PROVIDE SHOP DRAWINGS FOR STRUCTURE AND APPURTENANCES FOR REVIEW.

PROVIDE ALUMINUM STEPS 12" O.C. IN CATCH BASINS OVER 4' IN DEPTH

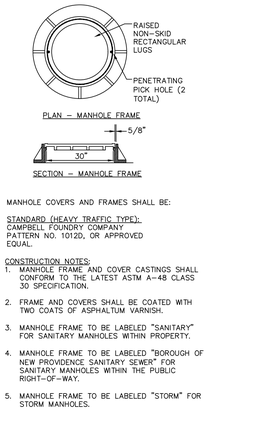
1 TYPE 'B' CATCH BASIN WITH CURB PIECE
NTS



MANHOLE SCHEDULE		
PIPE I.D.	"A" (DIA)	"B"
6"–27"	4'–0" (STD)	5"
27"–33"	5'–0"	6"
33"–42"	6'–0"	8"

GENERAL NOTES:
1. PROVIDE POLYPROPYLENE STEPS 12" O.C.
2. CONCRETE STRUCTURE TO BE DESIGNED TO AASHTO HS-20 LOADING.
3. CONCRETE TO TEST TO 4,500 PSI @ 28 DAYS.
4. CONCRETE STRUCTURE REINFORCING AS PER ASTM A-185.
5. FIRST STEP NOT TO EXCEED 12 INCHES FROM TOP OF RIM.
8. PRECAST MANUFACTURER IS RESPONSIBLE FOR STRUCTURAL DESIGN OF ALL PROPOSED PRECAST STRUCTURES.
9. PROVIDE SHOP DRAWINGS FOR STRUCTURE AND APPURTENANCES FOR REVIEW
10. ADJUST RIM TO GRADE WITH GROUT, BRICK, OR CONCRETE GRADE RINGS, 18" MAXIMUM.
11. THE EXTERIOR SURFACE OF MANHOLE TO BE SEAL COATED WITH COAL TAR OR ASPHALTIC PITCH,

2 STORM DRAINAGE & SANITARY MANHOLE
NTS

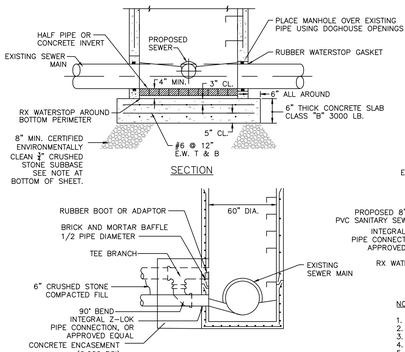


MANHOLE COVERS AND FRAMES SHALL BE:

STANDARD (HEAVY TRAFFIC TYPE):
CAMPBELL FOUNDRY COMPANY PATTERN NO. 1012D, OR APPROVED EQUAL

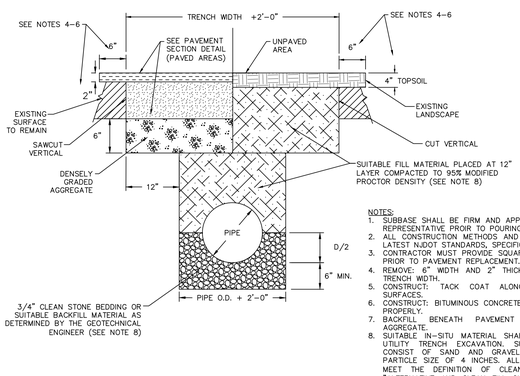
CONSTRUCTION NOTES:
1. MANHOLE FRAME AND COVER CASTINGS SHALL CONFORM TO THE LATEST ASTM A-48 CLASS 30 SPECIFICATION.
2. FRAME AND COVERS SHALL BE COATED WITH TWO COATS OF ASPHALTUM VARNISH.
3. MANHOLE FRAME TO BE LABELED "SANITARY" FOR SANITARY MANHOLES WITHIN PROPERTY.
4. MANHOLE FRAME TO BE LABELED "BOROUGH OF NEW PROVIDENCE SANITARY SEWER" FOR SANITARY MANHOLES WITHIN THE PUBLIC RIGHT-OF-WAY.
5. MANHOLE FRAME TO BE LABELED "STORM" FOR STORM MANHOLES.

3 MANHOLE FRAME AND COVER
NTS


HALF PIPE OR CONCRETE INVERT
EXISTING SEWER MAIN
PROPOSED SEWER
PLACE MANHOLE OVER EXISTING PIPE USING DOGHOUSE OPENINGS
RUBBER WATERSTOP GASKET
4" MIN.
3" CL.
6" ALL AROUND
6" THICK CONCRETE SLAB CLASS "B" 3000 LB.
RX WATERSTOP AROUND BOTTOM PERIMETER
8" MIN. CERTIFIED ENVIRONMENTALLY CLEAN 2" CRUSHED STONE SUBBASE SEE NOTE AT BOTTOM OF SHEET.
#6 @ 12" E.W. T & B
5" CL.
SECTION
RUBBER BOOT OR ADAPTOR
BRICK AND MORTAR BAFFLE 1/2 PIPE DIAMETER
TEE BRANCH
60" DIA.
EXISTING SEWER MAIN
6" CRUSHED STONE COMPACTED FILL
90° BEND INTEGRAL Z-LOK PIPE CONNECTION, OR APPROVED EQUAL
CONCRETE ENCASEMENT (2,000 PSI)
EXTERNAL DROP CONNECTION SECTION
FINISHED GRADE
MANHOLE FRAME & COVER
30" MIN.
O-RING FLEXIBLE WATERTIGHT RUBBER GASKET JOINT IN ACCORDANCE WITH ASTM C443
60" DIA.
TYPICAL PRECAST CONCRETE MANHOLE SECTION (SEE DETAIL THIS SHEET)
EXISTING SEWER MAIN
RUBBER GASKET
NON-SHRINK GROUT
CONCRETE BENCHING
PROPOSED 8" OR 10" PVC SANITARY SEWER PIPE
INTEGRAL Z-LOK PIPE CONNECTION, OR APPROVED EQUAL
8" MIN. CERTIFIED ENVIRONMENTALLY CLEAN 2" CRUSHED STONE SUBBASE SEE NOTE AT BOTTOM OF SHEET.
RX WATERSTOP
5" MIN
SECTION

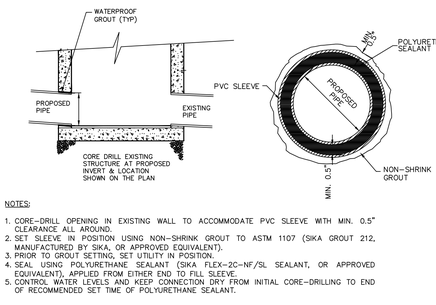
NOTES:
1. MANHOLES SHALL BE CONSTRUCTED TO WITHSTAND H-20 LOADING.
2. PROVIDE EXTERIOR DROP WHEN INVERTS IN AND OUT EXCEED 2 FEET.
3. ENTIRE EXTERIOR TO RECEIVE COATING OF BITUMINOUS SEALER.
4. LATERAL CONNECTIONS INTO EXISTING MANHOLES SHALL NOT BE USED.
5. ALL LIFT HOLES, PIPE CUTOUTS, ETC. ARE TO BE MORTAR AND PLUGGED PRIOR TO PLASTERING.
6. PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL FROM BOROUGH ENGINEER AND DESIGN ENGINEER.
7. PRECASTER RESPONSIBLE FOR STRUCTURAL DESIGN OF MANHOLE.
8. MANHOLE SHALL MEET THE STANDARD SPECIFICATION UNDER ASTM C 478.

4 DOGHOUSE SANITARY SEWER MANHOLE AND EXTERNAL DROP CONNECTION
NTS



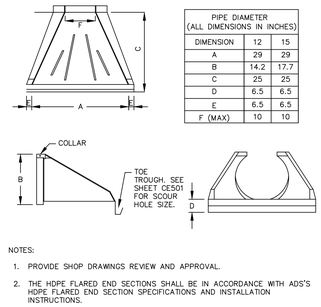
NOTES:
1. SUBBASE SHALL BE FIRM AND APPROVED BY THE ENGINEER OR HIS REPRESENTATIVE PRIOR TO POURING.
2. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO LATEST NJDOT STANDARDS, SPECIFICATIONS AND INSPECTIONS.
3. CONTRACTOR MUST PROVIDE SQUARE AND UNIFORM PAVEMENT CUT PRIOR TO PAVEMENT REPLACEMENT.
4. REMOVE: 6" WIDTH AND 2" THICK TOP SURFACE LAYER BEYOND TRENCH WIDTH.
5. CONSTRUCT: TACK COAT ALONG VERTICAL AND HORIZONTAL SURFACES.
6. CONSTRUCT: BITUMINOUS CONCRETE SURFACE COURSE AND ROLL IT PROPERLY.
7. BACKFILL BENEATH PAVEMENT SHALL BE DENSE GRADED AGGREGATE.
8. SUITABLE IN-SITU MATERIAL SHALL BE USED TO BACKFILL THE UTILITY TRENCH EXCAVATION. SUITABLE FILL MATERIAL SHALL CONSIST OF SAND AND GRAVEL MIXTURE HAVING A MAXIMUM PARTICLE SIZE OF 4 INCHES. ALL IMPORTED FILL MATERIAL MUST MEET THE DEFINITION OF CLEAN FILL DESCRIBED IN NJDEP'S "ALTERNATIVE AND CLEAN FILL GUIDANCE FOR SRP SITES" DATED DECEMBER 2011.

5 PIPE INSTALLATION AND PAVEMENT RESTORATION
NTS



NOTES:
1. CORE-DRILL OPENING IN EXISTING WALL TO ACCOMMODATE PVC SLEEVE WITH MIN. 0.5" CLEARANCE ALL AROUND.
2. SET SLEEVE IN POSITION USING NON-SHRINK GROUT TO ASTM 1107 (SIKA GROUT 212, MANUFACTURED BY SIKA, OR APPROVED EQUIVALENT).
3. PRIOR TO GROUT SETTING, SET UTILITY IN POSITION.
4. SEAL USING POLYURETHANE SEALANT (SIKA FLEX-2C-NF/SL SEALANT, OR APPROVED EQUIVALENT), APPLIED FROM EITHER END TO FILL SLEEVE.
5. CONTROL WATER LEVELS AND KEEP CONNECTION DRY FROM INITIAL CORE-DRILLING TO END OF RECOMMENDED SET TIME OF POLYURETHANE SEALANT.

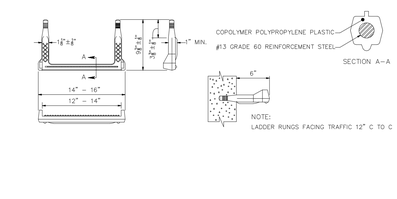
6 CONNECTION TO EXISTING STRUCTURE
NTS



PIPE DIAMETER (ALL DIMENSIONS IN INCHES)		
DIMENSION	12	15
A	29	29
B	14.2	17.7
C	25	25
D	6.5	6.5
E	6.5	6.5
F (MAX)	10	10

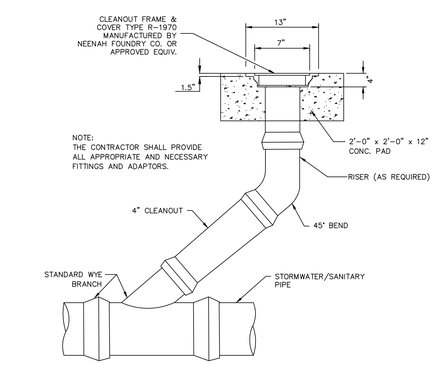
NOTES:
1. PROVIDE SHOP DRAWINGS REVIEW AND APPROVAL.
2. THE HDPE FLARED END SECTIONS SHALL BE IN ACCORDANCE WITH ADS'S HDPE FLARED END SECTION SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.

7 HDPE FLARED END SECTION
NTS



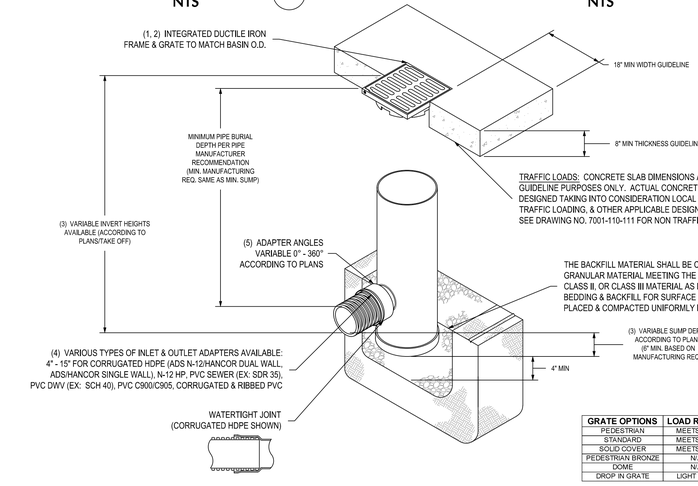
REF: NEW JERSEY DEPARTMENT OF TRANSPORTATION DETAIL (CD-602-1.5)

8 COPOLYMER PLASTIC LADDER RUNG
NTS


CLEANOUT FRAME & COVER TYPE R-1970 MANUFACTURED BY NEENAH FOUNDRY CO. OR APPROVED EQUIV.
13"
7"
1.5"
NOTE:
THE CONTRACTOR SHALL PROVIDE ALL APPROPRIATE AND NECESSARY FITTINGS AND ADAPTORS.
2'-0" x 2'-0" x 12" CONC. PAD
RISER (AS REQUIRED)
4" CLEANOUT
45° BEND
STANDARD WYE BRANCH
STORMWATER/SANITARY PIPE

NOTES:
1. COVER TO BE MARKED "SEWER" FOR SANITARY SEWER CLEANOUTS.
2. COVER TO BE MARKED "STORM" FOR STORM SEWER CLEANOUTS.
3. PROVIDE SHOP DRAWINGS REVIEW AND APPROVAL.

9 CLEANOUT
NTS

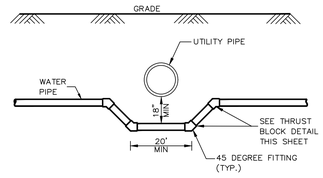

(1, 2) INTEGRATED DUCTILE IRON FRAME & GRATE TO MATCH BASIN O.D.
18" MIN WIDTH GUIDELINE
8" MIN THICKNESS GUIDELINE
MINIMUM PIPE BURIAL DEPTH PER PIPE MANUFACTURER RECOMMENDATION (MIN. MANUFACTURING REQ. SAME AS MIN. SUMP)
TRAFFIC LOADS: CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS. SEE DRAWING NO. 7001-110-111 FOR NON TRAFFIC INSTALLATION.
(3) VARIABLE INVERT HEIGHTS AVAILABLE (ACCORDING TO PLANS/TAKE OFF)
(5) ADAPTER ANGLES VARIABLE 0° - 360° ACCORDING TO PLANS
THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.
(4) VARIOUS TYPES OF INLET & OUTLET ADAPTERS AVAILABLE: 4" - 15" FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL, ADS/HANCOR SINGLE WALL), N-12 HP, PVC SEWER (EX: SDR 35), PVC DWV (EX: SCH 40), PVC C900/C905, CORRUGATED & RIBBED PVC
(3) VARIABLE SUMP DEPTH ACCORDING TO PLANS (6" MIN. BASED ON MANUFACTURING REQ.)
4" MIN
WATERTIGHT JOINT (CORRUGATED HDPE SHOWN)

1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1599CGP	7001-110-207
STANDARD	MEETS H-20	1599CGS	7001-110-208
SOLID COVER	MEETS H-20	1599CGC	7001-110-209
PEDESTRIAN BRONZE	N/A	1599CGPB	7001-110-210
DOME	N/A	1599CGD	7001-110-211
DROP IN GRATE	LIGHT DUTY	1501DI	7001-110-073

NOTES:
1. DETAIL OBTAINED FROM ADS WEBSITE.
2. PROVIDE SHOP DRAWINGS REVIEW AND APPROVAL.
3. REFER TO DRAINAGE STRUCTURE SCHEDULE ON DRAWING CG102 FOR SPECIFIED GRATE TYPES FOR EACH NYLOPLAST STRUCTURE.

10 NYLOPLAST DRAIN BASIN
NTS



NOTE:
1. ONE FULL LENGTH OF WATER PIPE SHOULD BE CENTERED UNDER THE CROSS PIPE SO THAT ALL JOINTS WILL BE AS FAR FROM THE CROSSING AS POSSIBLE.

11 DEPRESSED WATER LINE
NTS

Date	Description	No.
Revisions		

LANGAN
Langan Engineering and Environmental Services, LLC
300 Kimball Drive
Parsippany, NJ 07054
T: 973.560.4900 F: 973.560.4901 www.langan.com
NJ Certificate of Authorization No. 24GA27996400

Project

DATA CENTER AT BELL WORKS

BLOCK NO. 11, LOT NO. 11 38.07
A PORTION OF BLOCK NO. 11, LOT NO. 38.05
HOLMDEL TOWNSHIP
MONMOUTH COUNTY NEW JERSEY

Drawing Title

CONSTRUCTION DETAILS III

Project No.	
102054601	CS503
Date	
7/24/2026	
Drawn By	
GC	
Checked By	
BMW	

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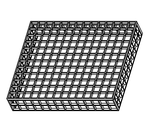
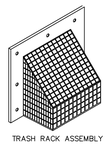
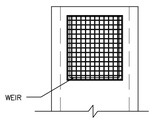
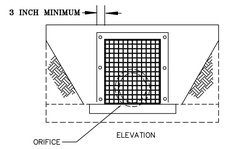


TRASH RACK ASSEMBLY



TRASH RACK ASSEMBLY





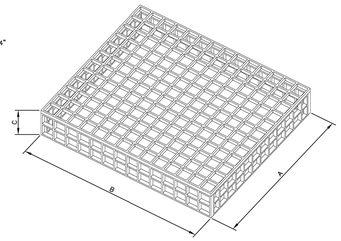
GENERAL NOTES:

1. TRASH RACKS SHALL BE INSTALLED AT THE INTAKE TO EACH OUTLET CONTROL STRUCTURE AND SHALL COMPLY WITH RSIS REQUIREMENTS.
2. TRASH RACKS SHALL BE ABLE TO WITHSTAND A PERPENDICULAR LIVE LOADING OF 300 PSF.
3. TRASH RACKS SHALL EXTEND A MINIMUM OF 6 INCHES OUTSIDE THE EXTENTS OF THE WEIR/ORIFICE AND SHALL NOT ADVERSELY AFFECT THE HYDRAULIC PERFORMANCE OF THE STRUCTURE.
4. ALL GRATES, PLATES AND ANGLES WILL BE ALUMINUM AND SHALL BE CORROSION RESISTANT.
5. ALL BOLTS WILL BE STAINLESS STEEL.
6. TRASH RACK SHALL HAVE PARALLEL BARS WITH ONE-INCH SPACING BETWEEN BARS TO THE ELEVATION OF THE WATER QUALITY DESIGN STORM. FOR ELEVATIONS HIGHER THAN THE WATER QUALITY DESIGN STORM, THE PARALLEL BARS AT THE OUTLET STRUCTURE SHALL BE SPACED NO GREATER THAN ONE-THIRD THE WIDTH OF THE DIAMETER OF THE ORIFICE OR ONE-THIRD THE WIDTH OF THE WEIR, WITH A MINIMUM SPACING BETWEEN BARS OF ONE INCH AND A MAXIMUM SPACING BETWEEN BARS OF SIX INCHES.

1 OUTLET CONTROL STRUCTURE TRASH RACK

NTS

FLAT ROOF RECTANGULAR RACKS/WEIRS
(STANDARD SIZES)
DIMENSIONS IN INCHES TO THE NEAREST 1/4"



HOST STRUCTURE INSIDE DIMENSIONS
____LENGTH ____WALL THICKNESS (REQUIRED)
____WIDTH

AS DISTRIBUTED BY CONTECH CONSTRUCTION PRODUCTS NATIONALLY

WIDTH (A)	11 3/8	16 3/4	22 1/8	27 1/2	32 7/8	38 1/4	43 5/8	49	54 3/8	59 3/4	65 1/8	70 1/2	75 7/8	81 7/8	87 1/4
CODE	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

LENGTH (B)	11 3/8	16 3/4	22 1/8	27 1/2	32 7/8	38 1/4	43 5/8	49	54 3/8	59 3/4	65 1/8	70 1/2	75 7/8	81 7/8	87 1/4
CODE	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

HEIGHT (C)	7 1/2	12 7/8
CODE	01	02
	1 GRID HIGH	2 GRID HIGH

FLAT ROOF (FR) ---------- WIDTH (A) ---------- LENGTH (B) ---------- HEIGHT (C)

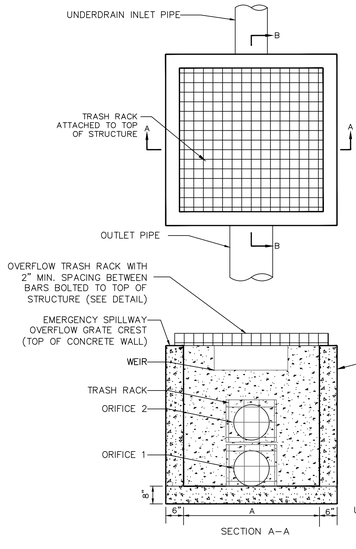
NOTES:

1. DETAIL OBTAINED FROM CONTECH WEBSITE. REFER TO CONTECH FOR INSTALLATION REQUIREMENTS.
2. PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL.
3. THE OVERFLOW GRATE SHALL BE CONSTRUCTED OF RIGID, DURABLE, AND CORROSION RESISTANT MATERIAL AND DESIGNED TO WITHSTAND A PERPENDICULAR LIVE LOADING OF 300 PSF.

	STRUCTURE DIMENSIONS	DIMENSION A	DIMENSION B	DIMENSION C
OCS-101	4'X4'	49"	49"	7 3/4"
OCS-201	4'X4'	49"	49"	7 3/4"
OCS-202	4'X4'	49"	49"	7 3/4"

2 OVERFLOW TRASH RACK

NTS



DATA CENTER AT BELL WORKS - BIORETENTION BASIN OUTLET CONTROL STRUCTURE SUMMARY TABLE

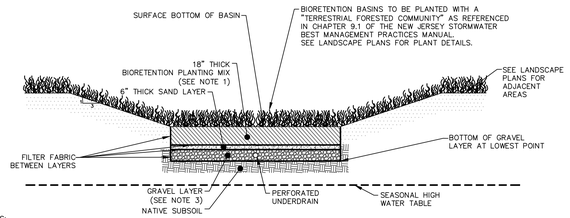
BASIN NO.	UNDERDRAIN PIPE SIZE	UNDERDRAIN PIPE INVERT ELEVATION (FEET)	OUTLET PIPE SIZE	OUTLET PIPE INVERT ELEVATION (FEET)	ORIFICE 1 SIZE	ORIFICE 1 INVERT ELEVATION (FEET)	ORIFICE 2 SIZE	ORIFICE 2 INVERT ELEVATION (FEET)	OVERFLOW INLET DIMENSION 'A' SIZE (FEET)	OVERFLOW INLET TOP OF STRUCTURE ELEVATION (FEET)
1	6" HDPE	99.75	18" HDPE	99.75	2.5"H X 27"W RECT.	103.80	2.5" H X 20" W RECT.	105.40	4	106.50
2	6" HDPE	99.25	18" HDPE	99.25	3.5" H X 32" W RECT.	103.20	4" H X 15" W RECT.	104.30	4	105.00
3	6" HDPE	99.25	18" HDPE	99.25	2.5" H X 18" W RECT.	103.00	2.5" H X 8" W RECT.	104.00	4	105.00

NOTES:

1. ALL ANCHOR BOLTS, NUTS AND WASHERS TO BE GALVANIZED.
2. PROVIDE PLASTIC LADDER RUNGS 12" O.C., MAXIMUM DISTANCE BETWEEN BOTTOM OF STEP AND BOTTOM OF STRUCTURE SHALL NOT EXCEED 18 INCHES.
3. CONCRETE TO TEST 4,500 PSI MIN. @ 28 DAYS.
4. CONCRETE STRUCTURE REINFORCING AS PER ASTM A-185.
5. THE PRECASTER SHALL BE RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE STRUCTURE.
6. PROVIDE SHOP DRAWINGS FOR STRUCTURES AND APPURTENANCES FOR REVIEW AND APPROVAL.

3 BIORETENTION BASIN OUTLET CONTROL STRUCTURE

NTS


SURFACE BOTTOM OF BASIN
BIORETENTION BASINS TO BE PLANTED WITH A "TERRESTRIAL FORESTED COMMUNITY" AS REFERENCED IN CHAPTER 9.1 OF THE NEW JERSEY STORMWATER BEST MANAGEMENT PRACTICES MANUAL. SEE LANDSCAPE PLANS FOR PLANT DETAILS.
18" THICK BIORETENTION PLANTING MIX (SEE NOTE 1)
6" THICK SAND LAYER
SEE LANDSCAPE PLANS FOR ADJACENT AREAS
BOTTOM OF GRAVEL LAYER AT LOWEST POINT
FILTER FABRIC BETWEEN LAYERS
GRAVEL LAYER (SEE NOTE 3)
NATIVE SUBSOIL
PERFORATED UNDERDRAIN
SEASONAL HIGH WATER TABLE

BIORETENTION BASIN WITH UNDERDRAIN

NOTES:

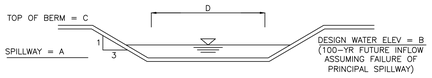
1. SEE PLANTING SOIL SPECIFICATIONS FOR BIORETENTION BASIN SOIL AND PREPARATION NOTES.
2. BIORETENTION BASIN (INCLUDING THE PLANT MIX, SAND, AND GRAVEL LAYER) TO BE CONSTRUCTED IN CONFORMANCE WITH NEW JERSEY STORMWATER BEST MANAGEMENT PRACTICES MANUAL SECTION 9.7: SMALL-SCALE BIORETENTION BASIN.
3. 3 INCHES OF GRAVEL LAYER SHALL BE PROVIDED ABOVE THE PERFORATED UNDERDRAIN AND A MINIMUM OF 3 INCHES OF GRAVEL LAYER SHALL BE BELOW THE PERFORATED UNDERDRAIN. THICKNESS OF GRAVEL LAYER WILL VARY THROUGHOUT BASIN AS A RESULT OF THE SLOPED UNDERDRAIN.
4. THE SOIL BED MATERIAL MUST CONSIST OF THE FOLLOWING MIX, BY WEIGHT: 85-95% SAND, WITH NO MORE THAN 25% OF THE SAND AS FINE OR VERY FINE SANDS; NO MORE THAN 15% SILT AND CLAY WITH 2% TO 5% CLAY CONTENT. THE ENTIRE MIX MUST THEN BE AMENDED WITH 3 TO 7% ORGANICS, BY WEIGHT.
5. THE TESTED PERMEABILITY RATE OF THE SOIL MEDIA SHALL BE AT LEAST 1 IN./HR.
6. THE 6" THICK SAND LAYER SHALL CONSIST OF MEDIUM-AGGREGATE CONCRETE SAND (AASHTO M-6/ASTM C-33) AND HAVE A PERMEABILITY RATE OF AT LEAST TWICE THE DESIGN PERMEABILITY RATE OF THE SOIL MEDIA.
7. THE GRAVEL LAYER SHALL CONSIST OF 0.5 TO 1.5 INCH CLEAN, BROKEN STONE OR PEA GRAVEL (AASHTO M-43).
8. PROVIDE SHOP DRAWINGS FOR ALL BASIN COMPONENTS (SOIL MEDIA, GRAVEL, SAND, PLANTINGS, UNDERDRAIN, ETC) FOR REVIEW AND APPROVAL PRIOR TO IMPORT TO THE SITE.

DATA CENTER AT BELL WORKS - BASIN SUMMARY TABLE

BASIN NO.	BASIN SURFACE ELEVATION (FEET)	WATER QUALITY WSE (FEET)	2-YR CURRENT WSE[1] (FEET)	2-YR FUTURE WSE[1] (FEET)	10-YR CURRENT WSE[1] (FEET)	10-YR FUTURE WSE[1] (FEET)	100-YR CURRENT WSE[1] (FEET)	100-YR FUTURE WSE[1] (FEET)	SPILLWAY FULL-FLOW WSE[2] (FEET)	BOTTOM ELEVATION OF GRAVEL LAYER (FEET)	SEASONAL HIGH WATER TABLE ELEVATION[3] (FEET)	SEPARATION FROM BOTTOM OF BMP TO SEASONAL HIGH WATER TABLE (FEET)
1	103	103.79	104.23	104.41	104.77	105.06	105.86	106.45	106.35	99.5	96.0	3.50
2	102.5	103.19	103.53	103.66	103.87	104.06	104.56	104.97	105.30	99.0	98.0	1.00
3	102.5	102.99	103.34	103.49	103.78	103.99	104.53	104.97	105.28	99.0	98.0	1.00

4 BIORETENTION BASIN

NTS

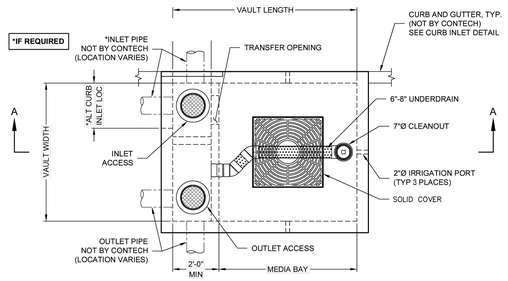


DATA CENTER AT BELL WORKS - EMERGENCY SPILLWAY SUMMARY TABLE

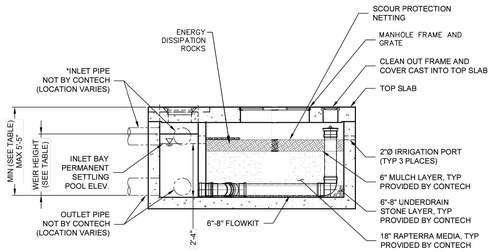
BASIN NO.	ELEVATION 'A' (FEET)	ELEVATION 'B' (FEET)	ELEVATION 'C' (FEET)	WIDTH 'D' (FEET)
1	106.50	106.85	107.50	29
2	105.00	105.30	106.00	33
3	105.00	105.28	106.00	40

5 EMERGENCY SPILLWAY

NTS



PLAN VIEW


ENERGY DISSIPATION ROCKS
SCOUR PROTECTION NETTING
MANHOLE FRAME AND GRATE
CLEAN OUT FRAME AND COVER CAST INTO TOP SLAB
*INLET PIPE NOT BY CONTECH (LOCATION VARIES)
TOP SLAB
MIN (SEE TABLE) MAX 1'-5"
WEIR HEIGHT (SEE TABLE)
INLET BAY PERMANENT SETTLING POOL ELEV.
2'Ø IRRIGATION PORT (TYP 3 PLACES)
6" MULCH LAYER, TYP PROVIDED BY CONTECH
6"-8" UNDERDRAIN STONE LAYER, TYP PROVIDED BY CONTECH
OUTLET PIPE NOT BY CONTECH (LOCATION VARIES)
6"-8" FLOWKIT
2'-4"
18" RAPTERRA MEDIA, TYP PROVIDED BY CONTECH

SECTION A-A

*IF REQUIRED

NOTES:

1. DETAIL OBTAINED FROM CONTECH WEBSITE. REFER TO CONTECH FOR INSTALLATION REQUIREMENTS.
2. PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL.

6 WATER QUALITY CONTROL STRUCTURE

NTS

RTPD CONFIGURATION
(OPTIONS: THROAT INLET "-T", PIPE INLET "-P", PIPE AND THROAT INLET "-PT")

MEDIA BAY SIZE (VAULT SIZE)	EFFECTIVE FILTRATION TREATMENT AREA (SF)	MTFR (cfs)	DESIGNATION	UNDERDRAIN SIZE	MIN RIM TO OUTLET	*WEIR LENGTH / MAX CURB OPENING	WEIR HEIGHT (ABOVE OUTLET)	TRANSFER OPENING SIZE	INLET / OUTLET ACCESS DIA.	TREE GRATE QTY. & SIZE	
4x4 (6x4)	15.79	0.344	RTPD0404	6" SDR 35	4'-1"	1'-8"	35"	4" x 15"	12" / 12"	(1) 3' x 3'	
4x6 (8x4)	23.79	0.518	RTPD0406	6" SDR 35	4'-1"	1'-8"	35"	4" x 15"	12" / 12"	(1) 3' x 3'	
6x4 (6x6)	23.79	0.518	RTPD0604	6" SDR 35	4'-1"	1'-8"	35"	4" x 36"	12" / 12"	(1) 3' x 3'	
4.5x5.83 (7.83 x 4.5)	26.02	0.567	RTPD045078	6" SDR 35	4'-1"	1'-8"	35"	4" x 20"	12" / 12"	(1) 3' x 3'	
6x6 (8x6)	35.79	0.780	RTPD0606	6" SDR 35	4'-1"	1'-8"	35"	4" x 36"	12" / 12"	(1) 3' x 3'	
6x8 (10x6)	47.79	1.041	RTPD0608	8" SDR 35	4'-3"	1'-8"	37"	4" x 36"	12" / 12"	(1) 4' x 4'	WQ-104
6x10 (12x6)	59.62	1.299	RTPD0610	8" SDR 35	4'-3"	1'-8"	37"	4" x 36"	12" / 12"	(1) 4' x 4'	WQ-103
7x10 (13x7)	69.62	1.517	RTPD0710	8" SDR 35	4'-3"	2'-6"	37"	4" x 42"	24" / 24"	(1) 4' x 4'	
8x10.5 (14x8)	83.62	1.822	RTPD08105	8" SDR 35	4'-4"	3'-0"	38"	5" x 48"	24" / 24"	(1) 4' x 4'	WQ-102
8x12.5 (16x8)	99.62	2.171	RTPD08125	8" SDR 35	4'-4"	3'-0"	38"	5" x 48"	24" / 24"	(2) 4' x 4'	WQ-101
8x14 (18x8)	111.23	2.424	RTPD0814	8" SDR 35	4'-5"	3'-6"	39"	6" x 48"	24" / 24"	(2) 4' x 4'	
8x16 (20x8)	127.23	2.772	RTPD0816	8" SDR 35	4'-6"	3'-6"	40"	7" x 48"	24" / 24"	(2) 4' x 4'	
8x18 (22x8)	143.23	3.121	RTPD0818	8" SDR 35	4'-6"	3'-6"	40"	7" x 48"	24" / 24"	(2) 4' x 4'	

*SITE SPECIFIC ANALYSIS IS REQUIRED TO DETERMINE CURB INLET AND WEIR OVERFLOW CAPACITIES.

Date	Description	No.
Revisions		

LANGAN
Langan Engineering and Environmental Services, LLC
300 Kimball Drive
Parsippany, NJ 07054
T: 973.560.4900 F: 973.560.4901 www.langan.com
NJ Certificate of Authorization No. 24GA27996400

Project

DATA CENTER AT BELL WORKS

BLOCK NO. 11, LOT NO. 11 38.07
A PORTION OF BLOCK NO. 11, LOT NO. 38.05
HOLMDEL TOWNSHIP
MONMOUTH COUNTY NEW JERSEY

Drawing Title

CONSTRUCTION DETAILS IV

Project No.	102054601
Date	7/24/2026
Drawn By	GC
Checked By	BMW

CS504

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Project No. 102054601

MAINTENANCE INSPECTION FOR CONVEYANCE SYSTEMS

DATA CENTER AT BELL WORKS
HOLMDEL, NEW JERSEY

NOTE: INSPECTIONS TO BE EVALUATED DURING A PERIOD OF DRY AND WARM WEATHER AT THE PROJECT SITE

Yes	No	Maintenance Evaluation	Action(s) Required if Answer "Yes"
❑	❑	Is there a buildup of sediment (in excess of 2 inches), trash, debris or any other stormwater pollution?	Remove sediment and evaluate on-site upstream systems. Dispose debris in accordance with local, state and federal requirements.
❑	❑	Is there standing water?	Evaluate downstream systems for clogging or trash sediment buildup.
❑	❑	Is there any structural failure?	Consult engineer to determine safety and/or stability of the system.
❑	❑	Are there visible signs of cracking, subsidence, erosion or deterioration of any of the storm conveyance systems?	Consult engineer to determine safety and/or stability of the system.
❑	❑	Are there any root intrusions or any other vegetation within catch basins, outlet control structures or storm manholes?	Remove roots and dispose vegetation in accordance with local, state and federal requirements.
❑	❑	Are ladder rungs in manholes or outlet structures damaged, missing or misaligned?	Repair or replace.
❑	❑	Are and covers or grates missing, damaged or only partially in place at any catch basin, outlet control structure or manhole?	Repair or replace.

MAINTENANCE LOG
FOR CONVEYANCE SYSTEMS

DATA CENTER AT BELL WORKS
HOLMDEL, NEW JERSEY

INSTRUCTIONS:
THIS LOG SHALL BE UPDATED TO INCLUDE ALL MAINTENANCE PERFORMED AT A SPECIFIC STORMWATER MEASURE.

DATE	PERSON CONDUCTING MAINTENANCE	AREA OF MAINTENANCE	PROBLEM(S) FOUND	ACTION(S) TAKEN

MAINTENANCE INSPECTION CHECKLIST FOR BIORETENTION BASINS

DATA CENTER AT BELL WORKS
HOLMDEL, NEW JERSEY

NOTE: INSPECTIONS TO BE EVALUATED DURING A PERIOD OF DRY AND WARM WEATHER AND LOW TIDE CONDITIONS AT THE PROJECT SITE

Yes	No	Maintenance Evaluation	Action(s) Required if Answer "Yes"
❑	❑	Is there a buildup of sediment (in excess of two inches), trash, debris or any other stormwater pollution in inlet/outlet structures or within the basin?	Remove sediment, trash, debris, etc. when the basin is dry and dispose of in accordance with local, state and federal requirements.
❑	❑	Are there visible signs of cracking (wider than half an inch), damage or deterioration on the outlet structure/trash rack and/or inlet structures?	Repair any cracks/damage to structures or replace structure. Consult an engineer if necessary to assess the damage.
❑	❑	Are there unstable basin embankments, or evidence of erosion in and around the basin including the emergency spillway and inlet areas?	Repair unstable embankments by reconstructing and properly stabilizing with vegetation/stone and repair and stabilize any eroded areas. Replace/replenish rip-rap as necessary at basin inlets.
❑	❑	Are there any signs of dying plants, bare areas or growth of trees within vicinity of basin?	Remove dead plants and replant as required, cultivate soils in bare areas and reseed as required and remove any trees that begin to grown in the vicinity of the basin.
❑	❑	Has the design time for maximum volume of water contained in the basin changed? (not to exceed 72 hours)	Cultivate soils and/or replace planting soils/sandy soils in basin bottom. Avoid use of equipment within the basin recharge area but if necessary, use light-weight equipment to avoid over-compaction of basin bottom. Dispose of soils in accordance with local, state and federal requirements.

MAINTENANCE LOG FOR BIORETENTION BASINS

DATA CENTER AT BELL WORKS
HOLMDEL, NEW JERSEY

INSTRUCTIONS:
THIS LOG SHALL BE UPDATED TO INCLUDE ALL MAINTENANCE PERFORMED AT A SPECIFIC STORMWATER MANAGEMENT MEASURE.

DATE	PERSON CONDUCTING MAINTENANCE	AREA OF MAINTENANCE	PROBLEM(S) FOUND	ACTION(S) TAKEN

Rapterra Vault Owner's Manual

(Precast Vault Configurations)

rapterra™

CONTECH® ENGINEERED SOLUTIONS
A QUIKRETE® COMPANY

This Owner's Manual applies to all precast Rapterra Configurations, including Rapterra Bioscape Vault.

Table of Contents

Introduction 4

Activation Overview 4

Rapterra Plant Selection Overview 6

Warranty Overview 6

Routine Maintenance Guidelines 6

Maintenance Visit Procedure 9

Plant Care 11

Appendix 1 – Activation Package 12

Appendix 2 – Rapterra Tree Grate Opening Expansion Procedure 19

Introduction

Thank you for your purchase of the Rapterra™ Bioretention System. Rapterra is a specially engineered stormwater treatment system incorporating high performance biofiltration media to remove pollutants from stormwater runoff. The system's biota (vegetation and soil microorganisms) then further breakdown and absorb captured pollutants. All components of the system work together to provide a sustainable long-term solution for treating stormwater runoff.

The Rapterra system has been delivered to you with protection in place to resist intrusion of construction related sediment which can contaminate the biofiltration media and result in inadequate system performance. These protection devices are intended as a best practice and cannot fully prevent contamination. It is the purchaser's responsibility to provide adequate measures to prevent construction related runoff from entering the Rapterra system.

Included with your purchase is Activation of the Rapterra system by the manufacturer as well as a 1-year warranty from delivery of the system and a final site assessment of unit condition (mulch replacement, debris removal, and pruning of vegetation, if applicable) scheduled between 6 and 12 months after activation, upon request.

Design and Installation

Each project presents different scopes for the use of Rapterra systems. Information and help may be provided to the design engineer during the planning process. Correct Rapterra box sizing (by rainfall region) is essential to predict pollutant removal rates for a given area. The engineer shall submit calculations for approval by the local jurisdiction. The contractor is responsible for the correct installation of Rapterra units as shown in approved plans. A comprehensive installation manual is available at www.ContechES.com.

Activation Overview

Activation of the Rapterra system is a procedure completed by the manufacturer to place the system into working condition. This involves the following items:

- Removal of construction runoff protection devices.
- Planting of the system's vegetation (provided by the purchaser) where applicable.
- Placement of pretreatment mulch layer using mulch acceptable for use in Rapterra systems.

Activation MUST be provided by the manufacturer to ensure proper site conditions are met for Activation, proper installation of the vegetation (where applicable), and use of pretreatment mulch acceptable for use in Rapterra systems. More information is available in the Rapterra Activation Package.

Minimum Requirements

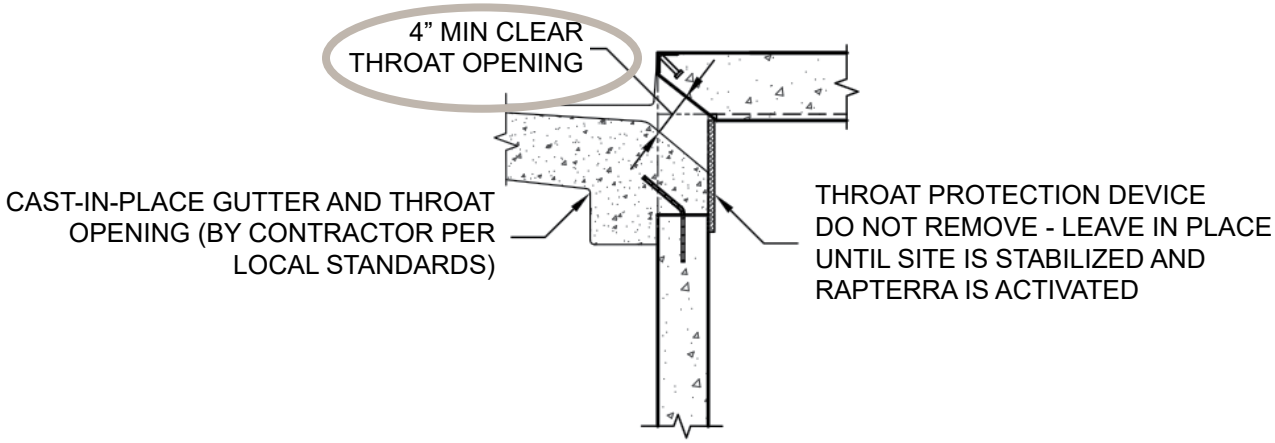
The minimum requirements for Rapterra Activation are as follows:

1. **If vegetation is specified or required, the purchaser must have procured vegetation meeting the requirements outlined in the Rapterra Activation Package.**

2. The site landscaping must be fully stabilized, i.e. full landscaping installed and some grass cover (not just straw and seed) is required to reduce sediment transport. Construction debris and materials should be removed from surrounding area.

3. Final paving must be completed. Final paving ensures that paving materials will not enter and contaminate the Rapterra system during the paving process, and that the plant will receive runoff from the drainage area, assisting with plant survival for the Rapterra system, where applicable.

4. Rapterra throat opening should be at least 4" in order to ensure adequate capacity for inflow and debris.



The Rapterra Activation Package is available on the Contech website (www.ContechES.com/Rapterra) and ensures that the proper conditions are met for Contech to perform the Activation service. If vegetation is specified or required, vegetation meeting Contech's requirements must be provided at time of Activation. If the site does not meet the conditions required for Activation, or acceptable vegetation is not provided by the purchaser at time of Activation, a charge of $1,500 will be invoiced to the purchaser.

Rapterra Plant Selection Overview

A Plant List is available on the Contech website highlighting recommended plants for Rapterra systems in your area for systems specified with and/or requiring vegetation. Keep in mind that plants are subject to availability due to seasonality and required minimum size for the Rapterra system. Plants installed in the Rapterra system are container plants (max 15 gallon) from nursery stock and will be immature in height and spread at Activation.

It is the responsibility of the owner to provide adequate irrigation when necessary to the plant of the Rapterra system.

More information is available in the Rapterra Activation Package.

Warranty Overview

Refer to the Contech Engineered Solutions LLC Stormwater Treatment System LIMITED WARRANTY for further information. The following conditions may void the Rapterra system's warranty and waive the manufacturer provided Activation and Final Site Assessment services:

- Unauthorized activation or performance of any of the items listed in the activation overview
- Any tampering, modifications or damage to the Rapterra system or runoff protection devices
- Removal of any Rapterra system components
- Failure to prevent construction related runoff from entering the Rapterra system
- Failure to properly store and protect any Rapterra components (including media and underdrain stone) that may be shipped separately from the vault

Final Site Assessment

With proper routine maintenance, the biofiltration media within the Rapterra system should last as long as traditional bioretention media. A final site assessment is included by the manufacturer, upon request, on all Rapterra systems between 6 and 12 months after activation. This includes a final assessment of unit condition, debris removal, mulch replacement, and pruning of vegetation, where applicable. More information is provided in the Operations and Maintenance Guidelines. Some Rapterra systems also contain pretreatment or outlet bays. Depending on site pollutant loading, these bays may require periodic removal of debris, however this is not included in the final site assessment, and would likely not be required within the first year of operation.

These services, as well as routine maintenance outside of the included first year, can be provided by certified maintenance providers listed on the Contech website. Training can also be provided to other stormwater maintenance or landscape providers.

Why Maintain?

All stormwater treatment systems require maintenance for effective operation. This necessity is often incorporated in your property's permitting process as a legally binding BMP maintenance agreement. Other reasons to maintain are:

- Avoiding legal challenges from your jurisdiction's maintenance enforcement program.
- Prolonging the expected lifespan of your Rapterra media.
- Avoiding more costly media replacement.
- Helping reduce pollutant loads leaving your property.

Simple maintenance of the Rapterra is required to continue effective pollutant removal from stormwater runoff before discharge into downstream waters. This procedure will also extend the longevity of the living biofilter system. The unit will recycle and accumulate pollutants within the biomass, but is also subjected to other materials entering the inlet. This may include trash, silt and leaves etc. which will be contained above the mulch layer. Too much silt may inhibit the Rapterra's flow rate, which is the reason for site stabilization before activation. Regular replacement of the mulch stops accumulation of such sediment.

When to Maintain?

Maintenance visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands while the fall visit helps the system by removing excessive leaf litter.

It has been found that in regions which receive between 30-50 inches of annual rainfall, (2) two visits are generally required; in regions with less rainfall often only (1) one visit per annum is sufficient. Varying land uses can affect maintenance frequency. Contributing drainage areas which are subject to new development wherein the recommended erosion and sediment control measures have not been implemented may require additional maintenance visits.

Some sites may be subjected to extreme sediment or trash loads, requiring more frequent maintenance visits. This is the reason for detailed notes of maintenance actions per unit, helping the Supplier and Owner predict future maintenance frequencies, reflecting individual site conditions.

Owners must promptly notify the maintenance provider of any damage to the plant(s), which constitute(s) an integral part of the bioretention technology.

Exclusion of Services

Clean up due to major contamination such as oils, chemicals, toxic spills, etc. will result in additional costs and are not included as part of the final site assessment. Should a major contamination event occur the Owner must block off the outlet pipe of the Rapterra (where the cleaned runoff drains to, such as drop inlet) and block off the throat of the Rapterra. The Supplier should be informed immediately.

Maintenance Visit Summary

Each maintenance visit consists of the following simple tasks (detailed instructions below).

1. Identify the Rapterra system
2. Inspection of Rapterra and surrounding area
3. Removal of tree grate or access cover, scour protection netting, and erosion control stones
4. Removal of debris, trash and mulch
5. Mulch replacement
6. Plant health evaluation and pruning or replacement as necessary
7. Replace scour netting, erosion control stones, and tree grate
8. Clean area around Rapterra
9. Complete paperwork

Maintenance Tools, Safety Equipment and Supplies

Ideal tools include: camera, bucket, shovel, broom, pruners, hoe/rake, and tape measure. Appropriate Personal Protective Equipment (PPE) should be used in accordance with local or company procedures. This may include impervious gloves where the type of trash is unknown, high visibility clothing and barricades when working in close proximity to traffic and also safety hats and shoes. A T-Bar or crowbar should be used for moving the tree grates (up to 170 lbs ea.). Most visits require minor trash removal and a full replacement of mulch. See below for actual number of bagged mulch that is required in each media bay size. Mulch should be a double shredded, hardwood variety. Some visits may require additional Rapterra engineered soil media available from the Supplier.

Box Length	Box Width	Filter Surface Area (ft^2)	Volume at 6" (ft^3)	# of 2 ft^3 Mulch Bags
4	4	16	8	4
6	4	24	12	6
8	4	32	16	8
6	6	36	18	10
8	6	48	24	12
10	6	60	30	16
12	6	72	36	18
13	7	91	46	24

Other sizes not listed - 1 bag per 8 ft^2 of media.

Maintenance Visit Procedure

Keep sufficient documentation of maintenance actions to predict location specific maintenance frequencies and needs. An example Maintenance Report is included in this manual.

1. Identify the Rapterra System

To ensure correct maintenance guidelines, correctly identifying a Rapterra system from a Filterra system is critical. A Rapterra unit can be identified using either the nameplate or the protective scour netting that covers the mulch. If no nameplate or scour netting is present, STOP and contact Contech.

2. Inspection of Rapterra and surrounding area

- Record individual unit before maintenance with photograph (numbered). Record on Maintenance Report (see example in this document) the following:

Record on Maintenance Report the following:

Standing Water	yes | no
Damage to Box Structure	yes | no
Damage to Grate	yes | no
Is Bypass Clear	yes | no

If yes answered to any of these observations, record with close-up photograph (numbered).

3. Removal of tree grate or access cover, scour protection netting, and erosion control stones

- Remove cast iron grates or covers for access into Rapterra box.
- Dig out silt (if any) and mulch and remove trash & foreign items.
- Remove stakes that hold scour protection netting in place. Carefully remove scour netting that sits above the mulch layer. This netting will be reused.

Record on Maintenance Report the following:

Silt/Clay	yes | no
Cups/ Bags	yes | no
Leaves	yes | no
Buckets Removed	_____

4. Removal of debris, trash and mulch

- After removal of mulch and debris, measure distance from the top of the Rapterra engineered media soil to the top of the top slab. Compare the measured distance to the distance shown on the approved Contract Drawings for the system. Add Rapterra media (not top soil or other) to bring media up as needed to distance indicated on drawings.

Record on Maintenance Report the following:

Distance to Top of Top Slab (inches)	_____
Inches of Media Added	_____

5. Mulch replacement

- Add double shredded mulch evenly across the entire unit to a depth of 6".
- Refer to Rapterra Mulch Specifications for information on acceptable sources.

6. Plant health evaluation and pruning or replacement as necessary

- Examine the plant's health, if applicable, and replace if necessary.
- Prune as necessary to encourage growth in the correct directions

Record on Maintenance Report the following:

Height above Grate	_____ (ft)
Width at Widest Point	_____ (ft)
Health	healthy | unhealthy
Damage to Plant	yes | no
Plant Replaced	yes | no

7. Replace scour netting, erosion control stones, and tree grate

- Relay and re-anchor scour netting from before on top of mulch layer.
- Ensure correct repositioning of erosion control stones by the Rapterra inlet to allow for entry of trash during a storm event.
- Replace Rapterra grates or covers correctly using appropriate lifting or moving tools, taking care not to damage the plant, if applicable.

8. Clean area around Rapterra

- Clean area around unit and remove all refuse to be disposed of appropriately.

9. Complete paperwork

- Deliver Maintenance Report.
- Some jurisdictions may require submission of maintenance reports in accordance with approvals. It is the responsibility of the Owner to comply with local regulations.

Plant Care for Rapterra™ Systems w/ Vegetation Specified and/or Required

After Activation, the Contractor is responsible for proper care of the vegetation until the site is handed over to the Owner. After that, it is the Site Owner's responsibility to care for the vegetation. Contech recommends the following care for the plants:

1. To prevent transplant shock (especially if planting takes place in the hot season), it may be necessary to prune some of the foliage to compensate for reduced root uptake capacity. This is accomplished by pruning away some of the smaller secondary branches or a main scaffold branch if there are too many. Too much foliage relative to the root ball can dehydrate and damage the plant.
2. Plant staking may be required.
3. With all trees/shrubs, remove dead, diseased, crossed/rubbing, sharply crotched branches or branches growing excessively long or in wrong direction compared to majority of branches.
4. Contech recommends irrigation of the Rapterra™ Vegetation. The following guidance will help to ensure the vegetation is properly irrigated.

Irrigation Recommendations:

- Each Rapterra™ system must receive adequate irrigation to ensure survival of the living system during periods of drier weather.
- Irrigation sources include rainfall runoff from downspouts and/or gutter flow, applied water through the tree grate or in some cases from an irrigation system with emitters installed during construction.
- At Activation: Apply about one (cool climates) to two (warm climates) gallons of water per inch of trunk diameter over the root ball.
- During Establishment: In common with all plants, each Rapterra™ plant will require more frequent watering during the establishment period. One inch of applied water per week for the first three months is recommended for cooler climates (2 to 3 inches for warmer climates). If the system is receiving rainfall runoff from the drainage area, then irrigation may not be needed. Inspection of the soil moisture content can be evaluated by gently brushing aside the mulch layer and feeling the soil. Be sure to replace the mulch when the assessment is complete. Irrigate as needed**.
- Established Plants: Established plants have fully developed root systems and can access the entire water column in the media. Therefore irrigation is less frequent but requires more applied water when performed. For a mature system assume 3.5 inches of available water within the media matrix. Irrigation demand can be estimated as 1" of irrigation demand per week. Therefore if dry periods exceed 3 weeks, irrigation may be required.

*** Five gallons per square yard approximates 1 inch of water. Therefore for a 6' x 6 foot Rapterra™ approximately 20-60 gallons of applied water is needed. To ensure even distribution of water it needs to be evenly sprinkled over the entire surface of the filter bed, with special attention to make sure the root ball is completely wetted. NOTE: if needed, measure the time it takes to fill a five gallon bucket to estimate the applied water flow rate. Then calculate the time needed to irrigate the Rapterra™, For example is the flow rate of the sprinkler is 5 gallons/minute then it would take 12 minutes to irrigate a 6'x6' filter.*

Plant Replacement:

In some cases, plants will require replacement. Please follow the procedures below to ensure a properly functioning Rapterra™ system.

1. Remove the existing plant, and leave as much of the Rapterra™ media in place as possible.
2. Select a replacement per the Rapterra™ Activation Package.
3. Prior to removing the plant from the container, ensure the soil moisture is sufficient to maintain the integrity of the root ball. If needed, pre-wet the container plant.
4. Cut away any roots which are growing out of the container drain holes.
5. Plant(s) should be carefully removed from the pot by gently pounding on the sides of the container with the fist to loosen root ball. Then carefully slide out. Do not lift plant(s) by trunk as this can break roots and cause soil to fall off. Extract the root ball in a horizontal position and support it to prevent it from breaking apart. Alternatively, the pot can be cut away to minimize root ball disturbance.
6. Excavate a hole with a diameter 4" greater than the root ball, gently place the plant(s).
7. Plant the tree/shrub/grass with the top of the root ball 1" above surrounding media to allow for settling.
8. All plants should have the main stem centered in the tree grate (where applicable) upon completion of installation.
9. Reinstall or add mulch to a depth of 6" per Contech's mulch specifications for Rapterra™ systems.

Maintenance Checklist

Drainage System Failure	Problem	Conditions to Check	Condition that Should Exist	Actions
Inlet	Excessive sediment or trash accumulation.	Accumulated sediments or trash impair free flow of water into Rapterra.	Inlet should be free of obstructions allowing free distributed flow of water into Rapterra.	Sediments and/or trash should be removed.
Mulch Cover	Trash and floatable debris accumulation.	Excessive trash and/or debris accumulation.	Minimal trash or other debris on mulch cover.	Trash and debris should be removed and mulch cover raked level. Ensure bark nugget mulch is not used.
Mulch Cover	"Ponding" of water on mulch cover.	"Ponding" in unit could be indicative of clogging due to excessive fine sediment accumulation or spill of petroleum oils.	Stormwater should drain freely and evenly through mulch cover.	Recommend contact manufacturer and replace mulch as a minimum.
Vegetation (where applicable)	Plants not growing or in poor condition.	Soil/mulch too wet, evidence of spill. Incorrect plant selection. Pest infestation. Vandalism to plants.	Plants should be healthy and pest free.	Contact manufacturer for advice.
Vegetation (where applicable)	Plant growth excessive.	Plants should be appropriate to the species and location of Rapterra.		Trim/prune plants in accordance with typical landscaping and safety needs.
Structure	Structure has visible cracks.	Cracks wider than 1/2 inch or evidence of soil particles entering the structure through the cracks.		Vault should be repaired.
Maintenance is ideally to be performed twice annually.				

Rapterra Inspection & Maintenance Log

Rapterra System Size/Model: _____ **Location:** _____

Date	Mulch & Debris Removed	Depth of Mulch Added	Mulch Brand	Height of Vegetation Above Grate (if applicable)	Vegetation Species (if applicable)	Issues with System	Comments
1/1/17	*5 – 5 gal Buckets*	*6"*	*Lowe's Premium Brown Mulch*	*4'*	*Galaxy Magnolia*	*- Standing water in downstream structure*	*- Removed blockage in downstream structure*

Appendix 1 – Rapterra™ Vault Activation Package

RAPTERRA™ VAULT ACTIVATION PACKAGE

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A QUIKRETE® COMPANY

The Rapterra system will be (or has been) delivered to you with protection in place to resist intrusion of construction related sediment which can contaminate the biofiltration media and result in inadequate system performance. These protection devices are intended as a best practice and cannot fully prevent contamination. It is the purchaser's responsibility to provide adequate measures to prevent construction related runoff from entering the Rapterra system.

Included with your purchase is Activation of the Rapterra system by the manufacturer as well as a 1-year warranty from delivery of the system and a Final Site Assessment (assessment of unit condition, mulch replacement, debris removal, and pruning of vegetation if applicable) scheduled between 6 months and 1 year after Activation, upon request.

Activation of the Rapterra system is a procedure completed by the manufacturer to place the system into working condition. This involves the following items:

- Removal of construction runoff protection devices
- Planting of the system's vegetation (provided by the purchaser where specified and/or required)
- Placement of pretreatment mulch layer using mulch acceptable for use in Rapterra systems.

Activation MUST be provided by the manufacturer to ensure proper site conditions are met for Activation, proper installation of the vegetation (where applicable), and use of pretreatment mulch acceptable for use in Rapterra systems. The purchaser should request Activation from Contech after the site is stabilized, but prior to turning over the site to the owner. Please allow 1-2 weeks to schedule Activation.

The purchaser must ensure that the site is acceptable for Rapterra Activation. A checklist (included as page 3 of this document must be completed and submitted to the Contech Activation Coordinator. The minimum 4 requirements for Rapterra Activation are as follows:

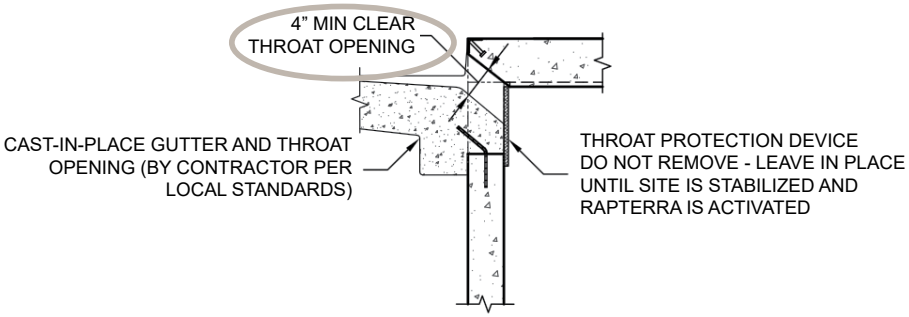
1. If vegetation is specified and/or required, the purchaser must have sourced vegetation meeting the requirements outlined in "Plant Selection for Rapterra Systems" starting on page 4 of this document.

* *UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants (when specified and/or required) are not provided by the contractor. ONLY Contech authorized representatives can perform Activation of Rapterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.*

2. The site landscaping must be fully stabilized, i.e. full landscaping installed and some grass cover (not just straw and seed) is required to reduce sediment transport. Construction debris and materials should be removed from surrounding area.

3. Final paving must be completed. Final paving ensures that paving materials will not enter and contaminate the Rapterra system during the paving process, and that the plant will receive runoff from the drainage area, assisting with plant survival for the Rapterra system.

4. Where curb inlets are included as part of the Rapterra system, Rapterra throat opening should be at least 4" clear in order to ensure adequate capacity for inflow and debris.



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Rapterra™ Vault Activation Checklist

CONTECH® ENGINEERED SOLUTIONS™ A QUIKRETE® COMPANY

Project Name:_____Company:_____

Site Contact Name: _____ Site Contact Phone/Email: _____

Site Owner/End User Name:_____Site Owner/End User Phone/Email: _____

Preferred Activation Date: _____ (provide 2 weeks minimum from date this form is submitted)

Site Designation	Top Opening Type	Final Pavement Complete	Landscaping Complete / Grass Emerging	Construction materials / Piles / Debris Removed	Throat Opening Measures 4" Min. Height (where applicable)	Vegetation Sourced by Contractor (where applicable)
	☐ Tree Grate ☐ Full Grate (No tree opening) ☐ Bioscape Vault (Open Planter)	☐ Verified	☐ Verified	☐ Verified	☐ Verified	☐ Species on FT Plant List ☐ Container Grown (15 gal. max) ☐ 4' Tall Min. (Tree grate units only) ____ Qty provided
	☐ Tree Grate ☐ Full Grate (No tree opening) ☐ Bioscape Vault (Open Planter)	☐ Verified	☐ Verified	☐ Verified	☐ Verified	☐ Species on FT Plant List ☐ Container Grown (15 gal. max) ☐ 4' Tall Min. (Tree grate units only) ____ Qty provided
	☐ Tree Grate ☐ Full Grate (No tree opening) ☐ Bioscape Vault (Open Planter)	☐ Verified	☐ Verified	☐ Verified	☐ Verified	☐ Species on FT Plant List ☐ Container Grown (15 gal. max) ☐ 4' Tall Min. (Tree grate units only) ____ Qty provided
	☐ Tree Grate ☐ Full Grate (No tree opening) ☐ Bioscape Vault (Open Planter)	☐ Verified	☐ Verified	☐ Verified	☐ Verified	☐ Species on FT Plant List ☐ Container Grown (15 gal. max) ☐ 4' Tall Min. (Tree grate units only) ____ Qty provided

Attach additional sheets as necessary.

NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for activation AND/OR acceptable plants are not provided by the contractor. ONLY Contech authorized representatives can perform activation of Rapterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.

_____ _____

Signature Date

* *UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants (when specified and/or required) are not provided by the contractor. ONLY Contech authorized representatives can perform Activation of Rapterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.*

Planting Selection for Rapterra™ Vault Systems Specifying and/or Requiring Plants

Vegetation is recommended in Rapterra for proper long-term performance. As indicated in the Activation Package, the Contractor is responsible for sourcing the proper vegetation prior to Activation. Contech or a Contech representative will install the vegetation during the Activation process.

Contractors should identify the Top Opening style for each Rapterra requiring Activation on the Activation Checklist. Contech offers three types, which are detailed on page 5 of this document:

- Vault with Tree Grate
- Vault with Full Grate
- Bioscape / Open Planter

Contractors must ensure the vegetation meets the following 4 requirements:

1. Select plant(s) as specified in the engineering plans and specifications AND that are listed on Contech's Configuration Specific Plant Lists**.
2. All plants MUST be container-grown in nursery containers no larger than 15 gallons. Crated and/or Ball/Burlap plants are NOT permitted.
3. For Vaults with Tree Grates, plant height must be 4' Minimum, from soil surface to top of plant.
4. Provide plant quantities per the following guidance:
   - Vault with Tree Grate – 1 per Tree Grate
   - Vault with Full Grate – 4-5 Small or Extra Small Grasses per Full Grate
   - Bioscape – Quantities should be selected based on plant palette options found starting on page 6 of this document.

If Contech or Contech's representative shows up for Activation and any of the 4 requirements above are not met, Activation cannot be performed and the Contractor will be billed a $1,500 Unprepared Site fee*.

Some additional vegetation recommendations for the best possible Activation and Installation are as follows:

- Select plant(s) with full root development but not to the point where root bound.
- For Rapterra systems with a Tree Grate, select plants with taller trunks. Lower branches can be pruned away provided there are sufficient branches above the grate for tree or shrub development.
- For Rapterra systems with a Tree Grate, plant(s) should have a single trunk at installation.
- Plant species shall not have a mature height greater than 30 feet.

** In some cases, Contech may consider alternate plant species as approved by the Product Manager. Please list the plant name in the space below and submit this sheet to your Contech Activation Coordinator. If the plant species is approved, either the Product Manager or the Activation Coordinator will sign the form and return to you for inclusion with your Activation Checklist.

Requested Plant Species: _____ Approved: _____

Date: _____

---

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Rapterra™ Top Opening Examples

Rapterra™ Vault with Tree Grate

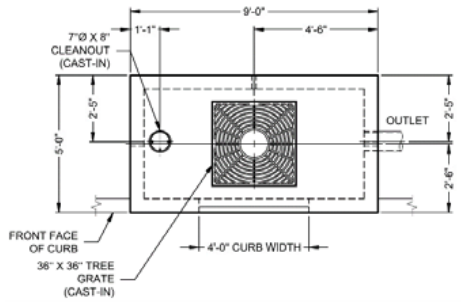

Figure 1a. Rapterra with Tree Grate Drawing

Figure 1b. Rapterra with Tree Grate Photo (not yet planted)

Rapterra™ Vault with Full Grate

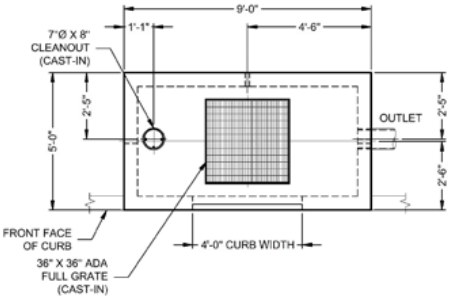

Figure 2a. Rapterra with Full Grate Drawing

Figure 2b. Rapterra with Full Grate Photo

Rapterra™ Bioscape Vault

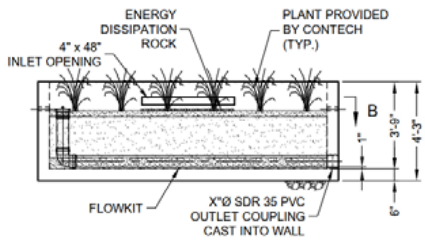

Figure 3a. Rapterra Bioscape Vault Drawing

Figure 3b. Rapterra Bioscape Vault Photo

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Rapterra™ Bioscape Vault Plant Palettes

KEY: (refer to plant lists for species sizing)

A. **EXTRA SMALL GRASS**
- Up to 2' mature spread
- 1-2 gallon typical (1 gal. minimum)

B. **SMALL GRASS/SHRUB**
- 2'-4' mature spread
- 1-7 gallon typical

C. **MEDIUM SHRUB**
- 4'-6' mature spread
- 1-7 gallon typical

D. **LARGE SHRUB OR EXTRA LARGE SHRUB OR TREE**
- 6' mature spread and greater, 30' max. mature height
- Up to 15 gallon maximum

NOTE: *For larger vaults and in-ground Rapterra Bioscape systems, palettes can be scaled (i.e. Qty 6 of the 22x8 Palette can be used for a 1056 sf Rapterra).*

MIX & MATCH OPTIONS:

1 Large Shrub or Extra Large Shrub or Tree
- 2 Medium Shrubs
- 4 Small Grass/SHrubs
- 12 Extra Small Grasses

1 Medium Shrub
- 2 Small Grass/Shrubs
- 6 Extra Small Grasses

1 Small Grass/Shrub
- 3 Extra Small Grasses

4x4 Media Bay — A. 3, B. 1, C. 1

4x6/6x4 Media Bay — A. 5, B. 2, C. 1

4x8/8x4 & 4.5x7.83/7.83x4.5 Media Bay — A. 6, B. 2, C. 1, D. 1

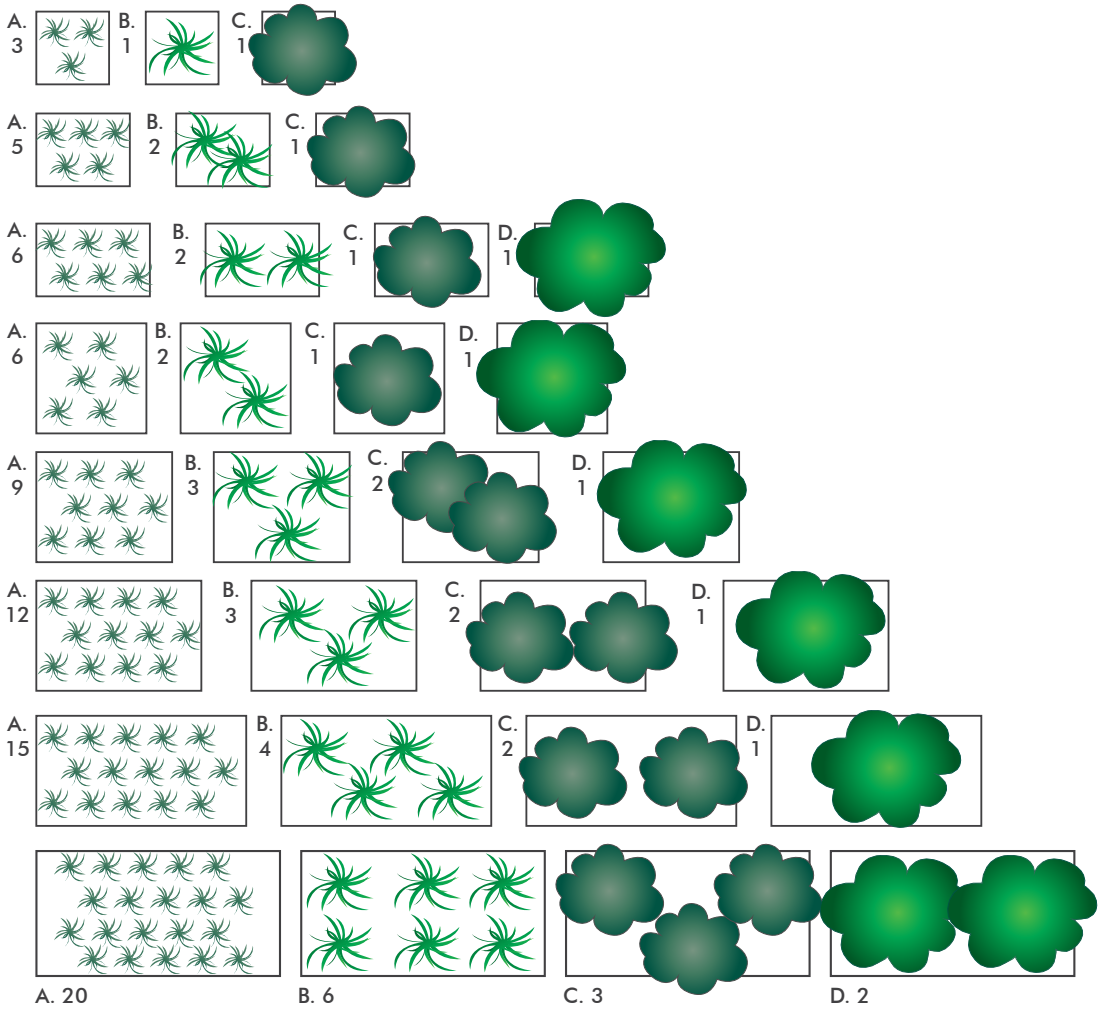
6x6 Media Bay — A. 6, B. 2, C. 1, D. 1

6x8/8x6 Media Bay — A. 9, B. 3, C. 2, D. 1

6x10/10x6 & 8x8 Media Bay — A. 12, B. 3, C. 2, D. 1

6x12/12x6 Media Bay — A. 15, B. 4, C. 2, D. 1

7x13/13x7/12x8 & 14x8 Media Bay — A. 20, B. 6, C. 3, D. 2



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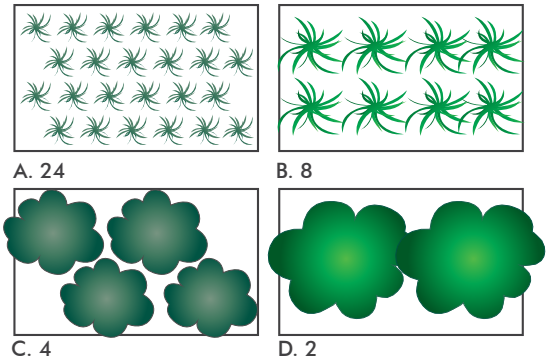
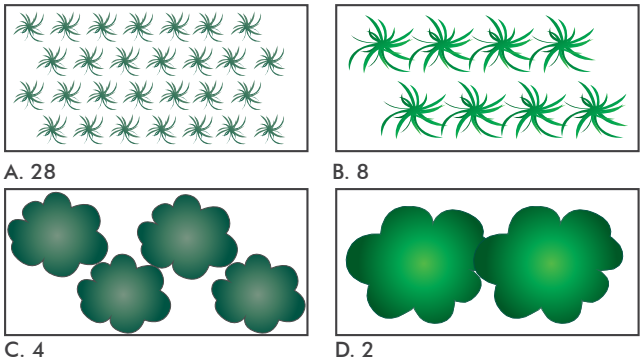
16x8 & 15x9 Media Bay



A. 24 B. 8

C. 4 D. 2

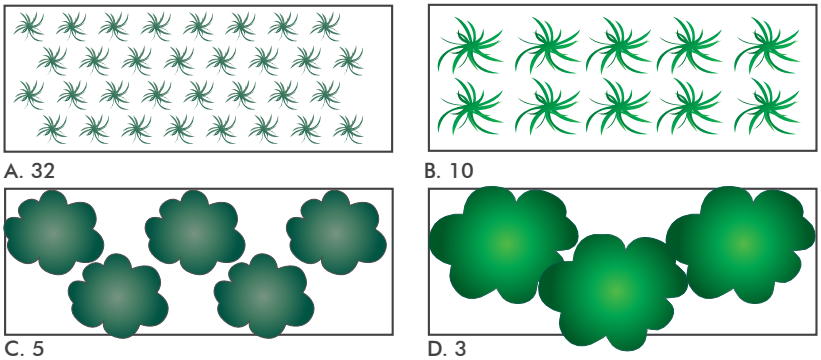
18x8 Media Bay



A. 28 B. 8

C. 4 D. 2

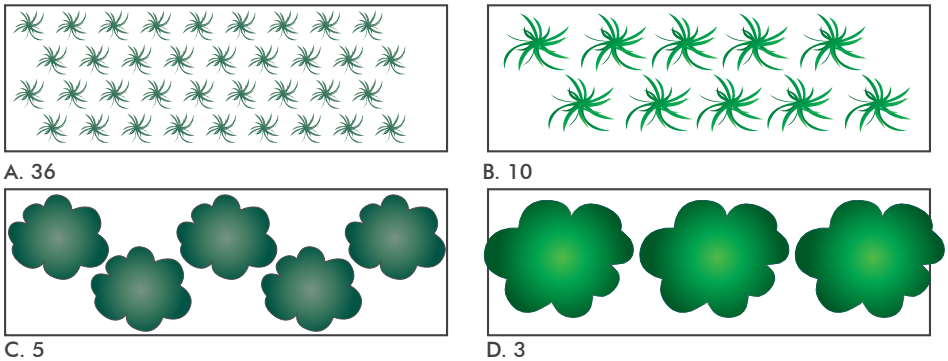
20x8 Media Bay



A. 32 B. 10

C. 5 D. 3

22x8 Media Bay



A. 36 B. 10

C. 5 D. 3

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Appendix 2 – Rapterra™ Tree Grate Opening Expansion Procedure

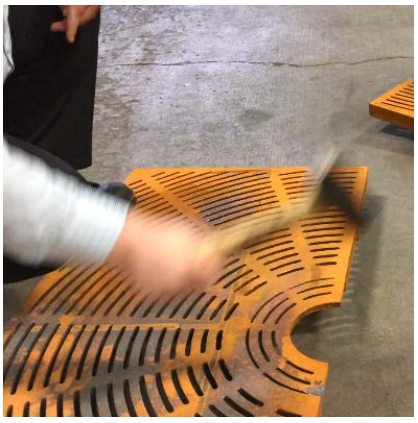
The standard grates used on all Rapterra configurations that employ Tree Grates are fabricated with a 6" opening that is designed with a breakaway section that can be removed, allowing the grate opening to be expanded to 12" as the tree matures and the trunk widens.

The following tools are required to expand the opening:

- Mini sledgehammer (3 lb. or greater)
- Safety Glasses / Goggles

The following guidelines should be followed to properly expand the tree opening from 6" to 12":

1. Remove the grate from the Rapterra frame, place it flat on a hard surface, and support the grate by stepping on the edge or using other weighted items such as a few mulch bags if this is being done during a Rapterra maintenance event. Put on safety glasses/goggles. Align the mini sledgehammer as shown in the figure to the left. The head of the sledgehammer should be aimed just inside the wide cast iron bar between the larger grate section and the breakaway section.



2. Repeatedly hit the grate at this spot with the mini sledgehammer.

3. After several hits, the breakaway section should snap cleanly off of the larger grate section. Reinstall the grate into the Rapterra grate frame. Recycle or dispose of the breakaway section per local guidelines.

Notes

Notes

Notes

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A QUIKRETE® COMPANY
9100 Centre Pointe Drive, Suite 400
West Chester, OH 45069
info@conteches.com | 800-338-1122
www.ContechES.com

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PDF 11/25

RECORD OF ANNUAL EVALUATION OF THE EFFECTIVENESS OF THE PLAN

DATA CENTER AT BELL WORKS
HOLMDEL, NEW JERSEY

NOTE: EVALUATION TO BE CONDUCTED DURING A PERIOD OF DRY AND WARM WEATHER AND LOW TIDE CONDITIONS AT THE PROJECT SITE

Evaluator(s)	Date of Evaluation	Decision
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